APPENDIX 6

BIOLOGICAL OPINION

Ecological Services
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Cheyenne, Wyoming 82001

In Reply Refer To:
ES-61411/W.19/WY7304 January 2, 2004
ES-6-WY-03-F0017

Memorandum

To: Priscilla E. Mecham, Field Manager, Bureau of Land Management, Pinedale Field Office, Pinedale, Wyoming

From: Brian T. Kelly, Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming */s/ Brian T. Kelly*

Subject: Programmatic Biological Opinion for the Wyoming Bureau of Land Management Snake River Resource Management Plan

This document transmits the U.S. Fish and Wildlife Service (Service) Biological Opinion based on our review of potential activities authorized under the Snake River Resource Management Plan (RMP) of the Bureau of Land Management (BLM) in Wyoming and their potential effects on the federally listed, proposed, and candidate species in accordance with the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq*.). Your June 16, 2003 request for formal consultation was received on June 17. The Biological Opinion (BO) addresses potential adverse effects to the bald eagle, from the authorized BLM activities of 12 planned programs according to the newly prepared BLM RMP for Snake River resource area. These programs are Cultural and Natural History Resources, Fire Management, Lands and Realty, Livestock Grazing, Minerals and Geology, Off-Highway Vehicles, Paleontological Resources, Recreation, Soils, Vegetation, Watershed, and Wildlife and Fisheries.

The Biological Opinion (BO) is based primarily on our review of your June 16, 2003 biological assessment (BA) (BLM 2003a) and correspondence from Keith Andrews in the BLM's Pinedale Field office. A complete administrative record of all documents and correspondence concerning this consultation are on file in the Wyoming Field Office.

CONSULTATION HISTORY

The Service provided current species lists to the BLM regarding this proposed action on August 12, 1998, June 26, 2001, and May 21, 2002. The Service responded to a BLM request for scoping comments on June 28, 2000. On May 16, 2003, the Service provided comments on the draft EIS for this proposed action. The Service received the BLM request for formal consultation on this proposed action on June 17, 2003. On June 24, 2003, the Service issued a memo to the BLM notifying them that all materials necessary for the initiation of formal consultation had been received.

Other Listed Species and Activities Not Likely to Adversely Affect the bald eagle: The BA also addressed effects of the Snake River RMP on the federally endangered black-footed ferret (*Mustela nigripes*), threatened Canada lynx (*Lynx canadensis*), threatened grizzly bear (*Ursus arctos horibilis)*, experimental non-essential population of the gray wolf (*Canis lupus*), proposed for listing mountain plover (*Charadrius montanus*), and the western population of the yellowbilled cuckoo (*Coccyzus americanus*). The Service concurs with your determinations that activities authorized by programs within the Snake River Resource Management Plan will have no effect on the black-footed ferret, Canada lynx, and grizzly bear because activities authorized by this Resource Management Plan will occur outside suitable habitat for these species. If these species are found within the planning area then the BLM is committed to reinitiating consultation at that time. These species will not be considered further in this BO.

Please be advised that the Service has withdrawn the proposal to list the mountain plover, and we will no longer be reviewing project impacts to this species under the Act. However, we encourage the BLM to continue providing protection for this species, as it remains to be protected under the Migratory Bird Treaty Act.

The Service also concurs with your determinations that activities authorized by the Climate and Air Quality, Cultural and Natural History Resources, Fire Management, Hazardous Materials and Waste Management, Lands and Realty, Livestock Grazing, Minerals and Geology, Off-Highway Vehicles, Paleontological Resources, Recreation, Socioeconomics, Soils, Vegetation, Visual Resources, Watershed, and Wildlife and Fisheries programs will not likely jeopardize the continued existence of the gray wolf species where it is federally listed. Gray wolves were reintroduced as an experimental population (Sec. 10(j)) in 1994 and 1995 to Yellowstone National Park. Under the provisions of Sec. 10(j), wolves are considered a "nonessential experimental" population and treated as a proposed species under Section 7 of the Act. A "nonessential experimental" population is a reintroduced population whose loss would not be likely to appreciably reduce the likelihood of survival of the species in the wild. Therefore, no proposed action impacting this gray wolf population could lead to jeopardy for this species (USFWS 1998). This designation allows management flexibility and quick response to needs for managing large carnivores.

The Service does not provide concurrence to species which are currently candidates for listing. However the Service has reviewed your determinations for the Western yellow-billed cuckoo and appreciates your efforts in providing a proactive analysis and determinations. Your conservation measures should serve to better protect this species from further decline and may help to reduce the need to list the Western population of the yellow-billed cuckoo.

The Service concurs with your determinations that activities authorized by the Climate and Air Quality, Hazardous Materials and Waste Management, Vegetation, and Visual Resources programs within this RMP will not likely adversely affect the bald eagle. A description of these programs and a summary of the rationale behind these effects determinations follow.

Climate and Air Quality - The BLM's Air quality program consists of monitoring efforts in cooperation with the U.S. Forest Service (USFS), Wyoming Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA) and evaluating and restricting surface development. Monitoring station sites are not located within the Action Area. Monitoring for air quality components, i.e., carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, particulate matter, visibility, and atmospheric deposition, is conducted from various facilities around Wyoming with the closest two being in Yellowstone National Park and Pinedale.

As these monitoring stations are not located in the planning area and the potential installation of a third monitoring station in the planning area is not reasonably foreseeable, this activity is not expected to have adverse affects to bald eagles within the planning area over the life of the plan.

Hazardous Materials and Waste Management - The BLM's Hazardous Materials Management program provides warnings; secures and disposes of hazardous waste discharged on public lands; reports, secures, and cleans up public lands contaminated with hazardous wastes; uses precautionary measures; establishes precautions; and, responds to emergencies.

Activities may include but are not limited to: containment, cleanup, and monitoring. In the unlikely event hazardous materials are released into the environment, a rapid and possibly sustained effort may be necessary to secure and remove or neutralize the offending material. Surface disturbing activities for emergency response may require a high level of human presence, the construction of access points, and certain types of equipment that could cause distress to wildlife, i.e., generators, pumps. These events are extremely unlikely due to the infrequency of hazardous material transportation accidents in Wyoming. Consultation with the Service will be conducted following any emergency hazardous materials activities. Whenever possible, nonemergency removal of contaminants, i.e., those that do not pose a near-term threat, would be scheduled at such a time that would not cause, or would minimize adverse impacts to bald eagles. As there is limited accessibility to the Snake River parcels, the likelihood of hazardous material or waste occurring along the Snake River is sufficiently remote so as to be "discountable", adverse impacts from containment, clean up, or monitoring efforts from this type of disturbance are not likely.

Visual Resources Management - Through Visual Resource Management (VRM), the BLM maintains or improves scenic values and visual quality, and establishes visual resource management priorities in conjunction with other resource values. Visual resource classification inventories have been developed for some but not for all of the areas in Wyoming. A visual resource inventory and classification process is a qualitative analysis performed along the riparian corridor, where most human activity on public lands occurs. A visual resource inventory provides (1) an inventory tool that portrays the relative visual quality of a landscape, and (2) a management tool that delineates visual protection standards by which surface disturbing activities may occur and establishes guidelines for the rehabilitation of existing projects, facilities and disturbances. The BLM lands in the planning area were classified as visual resource inventory Class II. To retain the characteristics of a Class II rating, actions or authorizations should adhere to these limits: retain the existing character of the landscape; the level of change to the characteristic landscape should be low; management activities may be seen but should not attract the attention of the casual observer; and, any changes should repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Effects due to visual resource management activities are not expected to affect the bald eagle because no field activities are actually involved with VRM management beyond the classification efforts which have been completed. Implementation of VRM management protocols could have a beneficial effect where structures or facilities are removed or not authorized in areas of bald eagle habitats.

PROGRAMMATIC BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action examined in this consultation is the approval of the Snake River Resource Management Plan (RMP). The Proposed Action describes potential activities which the BLM would authorize in the BLM Snake River planning area. A description of activities potentially authorized under the Proposed Action was contained in the Biological Assessment for the Snake River Resource Management Plan (2003a), and is described below.

Within the Snake River RMP planning area, there are approximately 23 miles of the Snake River, 4 miles of the Gros Ventre River, and associated wetlands. There are varied and intermingled land surface ownerships and overlapping mineral ownerships. The planning area is bounded on the east, south and west by the Bridger-Teton National Forest, and on the north by the Grand Teton National Park.

The Preferred Alternative allows for the BLM to transfer the land parcels of the Snake River RMP to new ownership within 15 years. Many resource actions listed in the Preferred Alternative would only apply as long as BLM owns and is actively managing the lands in the interim period before they are transferred to other public entities or management of resources. If the BLM does transfer the BLM parcels to other entities, the BLM would consult with the Service on each individual land exchange at that time in accordance with the Act.

Description of Activities Authorized under this RMP

The following discussion describes the BLM-Snake River Resource Management Plan programs and potentially authorized activities of the BLM. Conservation measures (Appendix I) were identified in the Snake River BA and may be implemented by the BLM. However for the purposes of this programmatic biological opinion, without a sound commitment by BLM to implement sufficient conservation measures for each and every action which may affect bald eagles, the Service assumes that the actions will be implemented without these conservation measures.

Cultural and Natural History Resources /Paleontological Resources - The BLM performs a variety of activities to preserve, protect, and restore cultural, paleontological and historical resources. During inventory activities, the BLM inventories, categorizes, and preserves cultural resources, conducts field activities, performs excavations, maps and collects surface materials, researches records, and photographs sites and cultural resources. Inventory data collection activities are used for documentation and development of mitigation plans prior to other resource program surface disturbing activities. Inventory activities commonly entail the use of hand tools, power tools, or heavy machinery. The BLM's cultural resource land management activities involve managing sites for scientific, public, and sociocultural use; developing interpretive sites; restricting certain land uses; closing certain areas to exploration; prohibiting some surface disturbing activities; preparing interpretive materials; and allowing the collection of certain invertebrate fossils. The BLM also seeks listing of eligible sites on the National Register of Historic Places, installs protective fencing of trail segments, stabilizes deteriorating buildings, acquires access to sites when necessary, performs surface disturbing activities associated with excavation of resources, pursues withdrawal of areas from exploration and development of locatable minerals, designates avoidance areas, pursues cooperative agreements, and identifies and interprets historic trails.

Inventory activities are categorized as Class I, Class II, and Class III inventories. The BLM does cultural resource inventories normally in response to other surface disturbance activities. In 2001, the BLM in Wyoming performed approximately 2600 inventories. Inventories can include transects set a distance apart from each other. There may be 8 transects/acre. Intensity varies between inventories. Inventories may involve 2-7 individuals and trucks and may last from a day long to several weeks long.

Cultural resource management activities within the planning area consist of (1) protecting and preserving significant cultural resources and (2) conducting inventories and data collection for documentation and development of mitigation plans prior to other resource program surface disturbing activities. The planning area contains both prehistoric and historic cultural resources. It is not known if the planning area contains traditional cultural properties or sites considered sensitive to modern Native Americans.

Formal inventory work conducted by the BLM in the Snake River Resource Area for Prehistoric Resources is limited. Preserved sites on BLM-lands are anticipated to be few because of the recent age of many of the Snake River floodplain sediments. Prehistoric campsites are preserved in alluvial soils on the higher terraces of the Snake River. The soils in the river channel include alluvial loams and extensive river-deposited quartzite cobbles. When cobbles dominate the surface, the potential for finding buried sites is low. The Grand Teton National Park (NPS) (1997) indicated that regular changes in the river channel would tend to destroy or displace prehistoric sites in the Snake River floodplain. There is a low probability of locating rock art on public lands along the Snake River, due to the lack of sandstone cliffs suitable for the inscription of petroglyphs.

The potential for locating historic period Euro-American sites in the planning area, however, is good. The Snake River is famous for periodic flooding and many dikes, levees, water diversions, bank stabilizations, and other flood control structures were constructed during the historic period. Other possible historic period sites include stock maintenance sites, placer mining sites, bridge remains, ferries, historic trash scatters, and other cultural material remains over fifty years of age.

Future inventory may include an assessment of the area's historic landscape potential. In recent years, there has been an increased interest in the archaeology near Jackson, Wyoming. Spurred by a series of NPS, Service, and USFS projects there is an increased understanding of the prehistory of the area. Most of these projects have concentrated on large sites where mitigative excavations took place.

Fire Management - The two major categories of activities involved with the BLM's fire management program are prescribed burning and wildfire suppression. During prescribed burning activities, the BLM evaluates areas on a case-by-case basis, writes fire plans, builds fire breaks, coordinates with all necessary parties and conducts prescribed burns. Prescribed fires are those intentionally set and controlled by the BLM and their cooperators. Prescribed fires are used to enhance natural resources in the area. Prescribed fire is also used to dispose of slash and residue from timber sales. Thinning activities are sometimes used to reduce the fuel levels before a prescribed fire. Some prescribed fires are conducted to improve wildlife habitat and grazing potential as well.

Fire suppression activities on the other hand are done on an emergency basis. Only minimal preplanning for fire suppression can take place because of the expediency needed. Fire suppression activities vary with intensity of the wildfire but can involve the use of off-road vehicles, hand tools and heavy equipment such as bulldozers. Fire lines are constructed to contain

the wildfire. Dozers create a line down to bare soil approximately 3 feet wide. Chemical fire suppression agents containing chemical dyes may be used if needed. These may affect the aquatic environment if used where the chemicals may enter the streams. Water is withdrawn from nearby sources to suppress the fire. Nearby sources may include streams, lakes, or public water supplies. After the fire is extinguished, the BLM may use rehabilitation techniques to restore a burned area to its previous vegetative cover. Rehabilitation techniques may involve planting small trees, grass, forbs, and shrubs. The BLM uses Burned Area Emergency Rehabilitation (BAER) for seeding, replanting trees, placing mulch on stream banks and building fences to control grazing. During fire suppression activities, it is occasionally necessary to allow bulldozer use in riparian and wetland areas if the fire suppression conditions necessitate such action.

Through fire suppression activities the BLM seeks to effectively protect life, property, and resource values from wildfire. The BLM uses fire suppression on fires endangering human life or fires that come within 0.25 miles of state or private lands, structures and facilities, and oil and gas fields. Acres of wildfire fluctuate annually. Recent trends throughout the Wyoming BLM are similar to trends throughout the west, with larger, catastrophic fires in recent years due to past fire suppression and the subsequent increase in fuels. The fire damage restoration proposes the BLM use a technique called Analysis of Burned Area Emergency Rehabilitation (BAER) on all areas damaged by fire. This technique is used to evaluate the impact of restoration efforts on the ecosystems involved.

Fire frequency in the planning area during recorded history has been low, due to the moist riparian environment which keeps lightning caused fires from spreading. Wildland fire ignitions on the BLM parcels covered by the Snake River RMP have been suppressed at 0.1 acre or less.

In accordance with the 2001 Federal Wildland Fire Management Policy, firefighter and public safety are the first priority in fire management. All of the Snake River parcels fall into Category A – Areas where wildfire is not desired. Suppression in these areas is required to prevent direct threats to life and property. The USFS has fire protection responsibility for the BLM-lands in Teton County. Under a mutual aid and protection agreement, Teton County is a first responder to any wildland fire incident on BLM-lands.

Use of prescribed fire is not an authorized activity under the preferred alternative because of the scattered nature and small size of the parcels, and the age of most of the cottonwood stands. In addition, spotted knapweed (*Centaurea maculosa*), a noxious species present on most or all of the public land parcels, will increase following fire. Control of prescribed fires would be difficult due to the lack of natural firebreaks; fire control activities could cause erosion and siltation of the Snake River. Most of the BLM parcels also are very near private homes, barns, and meadows, making fire control extremely important; the expanded control measures required in these situations would be cost-prohibitive.

Lands and Realty - The lands and realty management program seeks to support multiple-use management goals of the BLM resource programs; respond to public requests for land use authorizations, sales, and exchanges; and acquires and designates rights of way access to serve administrative and public needs.

Most rights-of-way granted by the BLM are for access roads, pipelines, communication sites, irrigation ditches, and electrical distribution lines associated with oil and gas wells and production facilities. These rights-of-way may be temporary or extended for two years or longer.

Land sales are disposals or transfers of public lands through desert land entry, public sale exchange, state of Wyoming indemnity selection, or recreation and public purposes leases or patents.

In its Lands and Realty Management program, the BLM also implements stipulations/protective measures. These activities include processing stock driveway withdrawals and locatable mineral entry withdrawals; establishing protective withdrawals; and developing stipulations.

Under the Lands and Realty Program, the BLM also pursues cooperative agreements; develops recreation site facilities; considers offsite mitigation; minimizes access in wildlife habitat; fences revegetation sites; blocks linear rights of way to vehicle use; considers temporary use permits; considers new withdrawals; and leases acres for landfills.

The Lands and Realty Management objective is to support multiple-use management goals of other BLM resource programs, respond to public requests for land use authorizations, sales, and exchanges, and acquire access to serve administrative and public needs. Maintaining "open public access to…natural resource areas," including the Snake River, for vehicle use, biking, hiking, horseback riding, and skiing is a high priority in the area.

BLM lands in the planning area consist of relatively small tracts with fair accessibility. While some parcels are easily accessed, others can be reached only from the river channel. Parcels that have good access include some of the largest parcels and the most valuable for recreation.

According to the Jackson Hole Land Trust website, roughly 9,000 acres of conservation easements, along with some private lands, have been purchased in and around Jackson Hole for the preservation of critical wildlife habitat, open space and scenic vistas, and historic ranching heritage.

The preferred alternative for the Snake River RMP states that rights-of-way proposals would be addressed on a case-by-case basis, with emphasis on avoiding conflict or sensitive areas. The location of rights-of-way to cross the Snake River on public land would only be allowed at the Wilson Bridge and the South Park Bridge. Important bald eagle habitat would be right-of-way exclusion areas.

There are no utility corridors designated on the BLM lands. No interest has been expressed in developing utility corridors on the BLM parcels as these are disconnected, interspersed with private lands, and many are located in riparian habitats. BLM lands do not contain suitable lands for communications sites. The BLM has granted several rights-of-way in the past for utilities and access roads. It is anticipated that gravel development activity and the population growth in the area will continue to create a demand for rights-of-way.

Withdrawals are used to preserve sensitive environmental values, protect major federal investments in facilities, support national security, and provide for public health and safety. They segregate a portion of public lands and suspend certain operations of the public land laws, such as desert land entries or mining claims. Land withdrawals can be used to transfer jurisdiction to other Federal land-managing agencies.

Livestock Grazing - A number of categories of activities make up the BLM's livestock management program. These categories are livestock management activities, range management, fencing, predator/pest management, water management, detrimental impacts management, and lease management.

Livestock management includes authorizing livestock grazing and adjusting season of use, distribution, kind, class, and number of livestock. One method that livestock producers can use to change the distribution of livestock is to provide salt or mineral supplements in specified areas. Range management activities include using prescribed fire, vegetation manipulation projects, changing composition of existing vegetation, using noxious weed control, using mechanical or biological vegetative treatments to improve forage production, using heavy equipment, and herbicide treatment of sagebrush. Fencing activities include fence construction and repair, design and implementation of grazing systems, and building livestock exclosures for important riparian habitat. Predator and pest management include the use of safe and effective prairie dog control measures, allowing new prairie dog towns to become established, and controlling predators. Water management activities include the development of reservoirs, springs, pipelines, and wells, and providing access to these developments. Managing detrimental impacts include documenting, treating, and preventing resource damage. Potential detrimental impacts include the degradation of stream banks, the introduction of noxious weeds, increased soil erosion, and a reduction in cottonwood tree recruitment. Lease management activities include conducting monitoring studies, performing project work to enhance and improve riparian zones, designating stock trails, managing leases, developing management plans and agreements, and canceling or changing livestock driveways.

Livestock grazing in the Snake River RMP is authorized in 4 grazing allotments totaling about 544 acres in the planning area. The level of authorized use is 300 animal unit months (AUMs). Sixty-two AUMs are authorized for spring grazing subject to an annual authorization. The remaining use takes place primarily during the summer on 10-year grazing leases issued under section 15 of the Taylor Grazing Act. Only a few range projects have been constructed in these allotments. There are also about 529 acres that are not allotted for grazing.

No grazing allotment management plans or grazing systems have been implemented in the planning area. Some rangeland monitoring information, including actual use records, utilization studies, and field observations, has been collected and the condition of riparian areas also has been assessed. All of the allotments have been evaluated for conformance with the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management. Some parcels failed to meet all six of the standards.

Minerals and Geology - The BLM's mineral development program is divided into three categories. These categories are salable minerals, leasable minerals, and locatable minerals.

Salable Minerals - Salable mineral mining is authorized under the Materials Act of 1947, as amended, and as such are discretionary actions. Salable minerals include sand, gravel, sandstone, shale, limestone, dolomite, and granite rock. Historical use of these materials was for building materials, road surfaces, and tools. Today, salable minerals are mainly used for maintaining roads and activities associated with the oil and gas industry. The BLM provides sand, gravel, and stone from federal mineral deposits as necessary to meet the need for federal, state, and local road construction and maintenance projects in the planning area.

Before issuing contracts or free use permits for salable minerals, the BLM conducts appropriate environmental assessments. These include special studies or inventories of cultural values, threatened or endangered plant and wildlife species, or other resources. Stipulations or conditions may be included in the terms of the contract to ensure protection of the natural resource found there and reclamation of the land following project completion. Site reclamation is required following any surface disturbing mining activity for salable minerals. Reclamation of disturbed sites is important to be sure that the land can later be used productively for other purposes.

Reclamation includes removing all surface debris, recontouring, reducing steep slopes, and planting vegetation. All reclamation proposals must conform to State agency requirements and must be approved by the BLM.

The Snake River channel primarily consists of material from glacial outwash deposits from the upstream portion of the Snake, and landslide material from the Gros Ventre and other landslides located along the two rivers. The most important salable mineral material occurring within the planning area is gravel. Demand for gravel in Jackson Hole is increasing as the number of homes, businesses, and roads in the area continues to grow. In the past, the planning area contained many gravel pits and quarries to meet the needs of highway, county, and private road construction, and levee construction and maintenance. Today, the planning area contains only four gravel operations. Three are companies operating on private lands along the Snake River; two where high river flows in the spring have been replacing the gravels extracted in the previous year and the third at a quarry directly upstream from one of the BLM parcels. The fourth operation was located north of the South Park highway bridge to supply gravel for widening U.S. Highway 189 south of Jackson; this gravel is not seasonally replenished. No gravel is currently being commercially produced from federal lands or mineral estate in the planning area.

Leasable Minerals - Leasable minerals include solid minerals such as coal, uranium and bentonite from acquired lands, and fluid minerals such as oil and gas.

Leasable Minerals (Solid) - Although not within the planning area, a few parcels underlain by bentonite exist on BLM lands in Wyoming through the Bankhead Jones Act, and under current regulations they are available for bentonite leasing. However, a recent court case on Forest Service lands has caused BLM to re-evaluate its authority to conduct any further leasing of nonenergy hard-rock minerals on BLM acquired lands. No economic coal deposits exist within the planning area.

The potential for the occurrence of Sodium, Potassium, and Oil Shale in the planning area is low. No deposits are known to exist there at this time. Outcrops of the Phosphoria Formation in the Meade Peak Member, East and West Gros Ventre Buttes, and south of Snow King Mountain within the planning area, and Teton Pass (west of the planning area) have very limited potential for mineral development due to steep bedrock dips of 15 to 60 degrees. Because of these limited exposures and steep dips in mountainous terrain, it is unlikely that any phosphate would be developed.

Leasable Minerals (Fluid) - The Mineral Leasing Act of 1920 provides that all public lands are open to oil and gas leasing unless a specific order has been issued to close an area. The Wyoming BLM has some of the most prolific oil-producing areas in the Rocky Mountains. It is estimated that seismic activity will continue at an elevated rate. Once acreage is nominated by the public to be included in an oil and gas lease sale, the acreage is sent to the appropriate BLM Field Office via the parcel list to be reviewed and stipulated by the Field Office for protection of wildlife and other sensitive resources. These stipulations become part of the lease.

Mineral exploration involves opening areas to geophysical exploration; permitting the exploration; allowing oil, gas, and mineral development; leasing and developing oil, gas, and geothermal steam resources.

Ancillary development involves allowing the construction of roads, pads, and other facilities; allowing the construction of new above ground powerlines. Activities of associated with lease stipulations involve: (1) implementing leases with no surface occupancy restrictions, seasonal

restrictions, or with other standard surface protection restrictions; (2) negotiating mitigated impacts between lessees and the authorized officer; and (3) deciding mitigation measures and limitations, and reclamation requirements.

Reclamation involves correcting any disturbance made by the oil and gas operation. Reclamation activities take place following the expiration of the lease. Reseeding, reshaping or road destruction are all activities involved with oil and gas reclamation.

Before seismic activity is completed, a Notice of Intent (NOI) which gives the location and type of activity, and the results of an on-the-ground cultural inventory must be filed in the appropriate Field office. The BLM conducts an in-office study as well as environmental analysis to determine if any threatened or endangered species will be affected. Most recent seismic activity in the area has been 3-D surveys.

Prior to drilling activities, an application for permit to drill (APD) must be approved and a site specific Environmental Assessment (EA) completed for each APD. APDs are subject to site-specific conditions of approval which may be more restrictive than lease stipulations. The field office manager may add further timing and location restrictions to protect local resources. Drilling operations are inspected regularly as are production facilities.

Construction and operation of drill sites could result in either irreversible or irretrievable commitment of certain resources. Irreversible is a term that describes the loss of future options. It applies primarily to the effects of the use of nonrenewable resources, such as soil productivity, that are renewable only after a long period of time. Irretrievable is a term that applies to the loss of production, harvest, or use of natural resources. For example, forage production from an area is lost irretrievably while the area is serving as a drill site. The forage production lost is irretrievable, but the operation is not irreversible. If the use changes and the drill sites are reclaimed, it is possible to resume forage production. Site-specific commitment of resources includes the removal of vegetation and commitment of land surface to roads and well pads. The land area used for permanent roads would be an irretrievable commitment of land available to produce forage.

No oil and gas discoveries have occurred near the planning area, and no oil and gas wells have been drilled within the planning area. The nearest wells to the planning area (all dry holes) were drilled along the Darby Thrust Fault in and around Hoback Junction, about 14 miles south of Jackson. The petroleum potential within the planning area north of the Cache Creek Thrust Fault is unknown and the potential for occurrence of hydrocarbons in the southern portion of the planning area is moderate. However, with the current population increase in the area and current private land use trends of increased residential development and resource preservation there, no oil and gas development is reasonably foreseeable in this area (BLM 2003a, Keith Andrews Personal Communication).

Evidence of volcanic activity is present in the area. Numerous hot and warm springs in and around the planning area provide evidence of hot magma at depth. The geothermal potential within the study area is moderate to good. However, the potential for commercial development of the resource is low. Legislation has been introduced at the state and federal level on several occasions to protect geothermal resources within the greater Yellowstone ecosystem from drilling and development. Hot springs are located on the periphery of the planning area on state and private lands.

Locatable Minerals - All public lands are also open to exploration for locatable minerals except those withdrawn to protect other resource values and uses or those lands with acquired mineral status. The BLM has limited management authority over mining claim operations for locatable minerals conducted under the General Mining Law of 1872. These operations are managed using the surface regulations in 43 CFR 3809. Activity authorized under the General Mining Law, is not subject to many of the special stipulations that are used in the salable and leasable mineral programs to protect sensitive resources from surface disturbance caused by mineral development.

Gold is the primary locatable mineral deposit within the planning area. However, the potential for the occurrence of gold within the river gravel is low. Gold, when it occurs here, occurs as minute flakes and flour within large volumes of sand and gravel. Recreational panning may occur on BLM lands in the planning area, however, a specific source area for the gold is unknown. Other locatable minerals of Wyoming BLM, although not necessarily found in the planning area include bentonite, uranium, gypsum, silver, platinum, and cobalt.

Currently, there are no active mining claims within the planning area; however, claims have been located in the past. The most recent claims were located in the late 1960's, with the latest activity in 1982. For the most part, these were placer claims located along the Snake River for gold but all claims in the planning area have been abandoned. The potential for placer gold development is low. No past placer operations in Jackson Hole Valley are known to have yielded economically profitable amounts of gold.

Actions associated with commercial locatable minerals include surface disturbance for mining, reclamation, and construction of access roads, buildings, and utility lines. Small scale mining may occur in the planning area but individual casual use activities may not require BLM authorization unless activities become significant. All lands must be reclaimed after expiration of a mining lease.

Off-Highway Vehicles - The BLM designates closed, limited, or open areas for Off-Highway vehicle (OHV) use, posts signs, develops maps, or brochures, permits OHV rallies, cross-country races, and outings, monitors OHV use, and performs necessary tasks requiring OHV use. Most OHV use (including over-the-snow vehicles) on BLM administered lands is limited to existing roads and trails. Some areas are closed to OHV use. Seasonal restrictions may be applied in crucial wildlife habitats as needed. In addition OHVs are prohibited on wet soils.

Most of the existing roads on the BLM parcels are part of the U.S. and/or Teton County transportation system. OHVs which are used in the planning area include snowmobiles, motorcycles, all-terrain vehicles, and mountain bikes. OHV use on the BLM parcels is minimal, due to limited public road access and is restricted to existing roads and trails, including levees. Some exceptions may include tasks necessary for retrieval of harvested big game, fire fighting activities, or hazardous/waste material removal. However, some unauthorized trails are becoming established. Motorized boating occurs but is not currently a popular activity.

Mountain biking on the levees is a common recreational activity. Some mountain bike use also occurs off road and this contributes to the creation/establishment of unauthorized trails.

The BLM recognizes the use of bicycles and other human-powered, mechanized conveyances as appropriate recreational activities. Federal regulations do not specifically address management of non-motorized vehicle use. There are substantial differences in the types of use, associated impacts, and management approaches between non-motorized and motorized vehicle activities.

Until a national strategy and rules for non-motorized vehicle use on public lands are established, the BLM will continue to include non-motorized use within the context of OHV designations.

Recreation - Categories of Recreation management activities include allowing recreational access and use by the public, developing recreational areas and campsites, imposing restrictions, acquiring recreational access, and assessing effects of recreational use to the environment. Recreational activities allowed by the BLM include hiking, hunting, mountain biking, boating, and fishing, OHV use (as discussed separately above), horseback riding, and camping. Large recreational events may include organized group hikes, motocross competitions, or horse endurance rides. Recreational land and access acquisition activities involve maintaining public access, pursuing rights-of-way, providing continued access, and pursuing land acquisition. Recreational site development includes maintaining or developing recreational sites and facilities, developing campgrounds, providing fishing and floating opportunities, maintaining developed and undeveloped recreational sites, adding developments as opportunities arise, adding interpretive markers, and constructing roads and interpretive sites.

Development and enforcement of stipulations/protective measures includes designating OHV use, enforcing recreation-oriented regulations, patrolling high-use areas and contacting users in the field. The BLM places boundary signs, identifies hazards on rivers, restricts recreational uses; with some exceptions, limits motorized vehicles to existing trails, designates road use and recreation areas, requires facilities to blend with the natural environment, and conducts field inventories.

While assessing negative effects of recreational activities to the environment the BLM analyzes activities which increase human activity, especially in riparian areas. The BLM monitors recreational use, develops management plans, and evaluates and updates recreational potential.

The types of recreational activities available on BLM lands in the planning area or as a result of public access include: float fishing and scenic floating (both private and guided), waterfowl hunting, mountain biking, hiking, dog walking, wildlife viewing, cross-country skiing and OHV activities. Public lands in the planning area are currently closed to overnight camping. Development of recreational and camping sites may be pursued on select BLM parcels in the planning area. Likewise, if parcels are acquired by other entities, additional public recreation facilities may be developed. There is the potential for recreational activities to occur year-round in most of the planning area, though some parcels would receive minimal use during the winter period due to poor accessibility. Visitor use is highest during the summer months.

Restricted public use is allowed on most of the private lands in the Snake River channel through recreational easements. This access does not extend outside the river levees; in many cases it does not even include the levees themselves. These easements do not provide increased access to the river, but a greater range of activities when one is on the river. These easements allow only very specific uses of the river on private lands, including floating, fishing, wading, hiking, and picnicking. Most notably, boats can be anchored for fishing in these areas. Other uses, including camping, building fires, and hunting are prohibited on the easements.

The majority of river floating activity occurs during the warmest months following the high flows of early summer snow melt. Float fishing use begins in April with the opening of trout fishing season and peaks as fishing conditions improve during late summer and fall. Walking, biking, and horseback riding are the most common upland activities. Swimming and wade fishing also are popular activities and most commonly occur near the public access locations.

The only developed boating access on public lands in the planning area is the Wilson Bridge boat ramp. The Wilson Bridge boat ramp is a boating take-out and put-in for approximately 23 miles of the Snake River. This access, developed in cooperation with Teton County, consists of a gravel ramp for launching and landing boats, a parking area, restrooms, and information kiosk. The NPS provides boating access at Moose, Wyoming, for floating downstream to the Wilson Bridge access. Some limited floating access is provided by private landowners.

Public boating access is also provided by the Wyoming Game and Fish Department (WGFD) through an access agreement on private lands located at the north end of the South Park Bridge. An area on public lands on the south side of the South Park Bridge has occasionally been used for landing and launching boats, but has not been developed for this purpose. There is currently a proposal to develop a boat launch area on public lands near the South Park Bridge. This activity would require separate section 7 consultation prior to project approval and implementation.

Commercially-guided scenic float and fishing trips are popular in the planning area as part of the tourism-based economy of the town of Jackson. Commercial, competitive, and large group floating activities are currently unregulated within the planning area, except where floating access is provided by the NPS. The USFS regulates commercial, competitive, and group use in river segments below the South Park bridge. Commercial and private floating use fluctuates yearly, but water-based recreation activity and demand throughout the region has increased dramatically over the past 20 years. Rough estimates of floating use in the Wilson to South Park segment exceed 25,000 people per floating season. As many as 60 boats per day may launch from the Wilson Bridge boat ramp. The demand for these services and activities will likely continue to grow. River use allocation measures have been implemented by other land management agencies to protect wildlife habitat, provide for human health and safety, and maintain a quality recreation experience. The river segments within the planning unit provide for substantial commercial and private floating use. The demand for recreation facilities and recreation activities currently exceeds the supply of services and opportunities. This imbalance is expected to continue regardless of applied existing or future management scenarios. A trend of increasing recreation visitation is also expected to continue, further widening the gap between supply and demand.

Public lands along the Snake and Gros Ventre Rivers may be designated a Special Recreation Management Area to facilitate management of recreational activities previously identified as well as competitive and group activities, trail and road construction, and building and maintenance of campgrounds and associated outbuildings.

Vegetation Management - Vegetation resources management objectives are: to maintain or improve the diversity of plant communities to support livestock grazing, wildlife habitat, watershed protection, visual resources, and reduce the spread of noxious weeds; to maintain or enhance essential and important habitats for special status plants species on BLM land surface; and prevent the need for any special status plant species being listed as threatened or endangered.

As part of the vegetation management program, the BLM designs vegetation treatments; conducts prescribed burns; implements weed control programs; plants trees; allows precommercial tree thinning; provides buffer zones; allows activities which increase human presence; allows the use of machinery or fire; improves riparian habitat; pursues the acquisition of additional riparian areas; allows spraying, burning, mechanical disturbances; uses species-specific insects, livestock grazing, mechanical methods, or chemical methods; and conducts plant species surveys. No timber harvest activities are anticipated to occur with the Snake River RMP parcels.

Most plants found on the Snake River floodplain are intricately related to sediment deposition and water discharge patterns over time. Sediment deposition provides the substrate (soil) for plants, while water levels relative to sediment surfaces provide water for growth of established plants and seed germination.

Since the U.S. Army Corps of Engineers (COE) has jurisdictional responsibilities over many aspects of the hydrology of the Snake River within the planning area, the BLM recognizes the COE habitat-type categories for the areas surrounding the Snake River parcels. These generalized categories are: Riparian Forest, Riparian Shrubland, Riparian Grassland, Upland and Palustrine, and Riverine. While all of these types may occur to some degree along the river reaches under BLM's jurisdiction, the principal cover type is the Riparian Forest which is dominated by a narrow-leaf cottonwood riparian complex.

This vegetation screens much of the river corridor from human intrusions and alterations. However, land uses are occurring along much of the river's edge which alters the natural vegetation. A few upland type vegetation communities are found on some of the parcels. The upland plant communities are characterized by sagebrush along with bitterbrush, serviceberry and snowberry, and grasses in the open areas, while lodgepole pine and Douglas fir are often found on forested hillsides.

In 1990, the Service predicted a declining trend for the cottonwood forests along the Snake River corridor due to a lack of overbank flooding necessary for new stand stimulation. Cover type mapping performed by the COE supports this hypothesis. Long-term replacement of these stands depends on periodic habitat conditions caused by flooding and floodplain scouring. The declining trend in vegetation condition is likely to continue with the operation and maintenance of the flood-control levees.

Disturbances, such as maintenance and construction of levees, open large areas for colonization by opportunistic species. The disturbance reduces or eliminates other plant species and allows for exploitation of the resources present. The levees, and activities associated with them, create a corridor of disturbance that initiates a shift in the herbaceous species composition from one dominated by natives to one dominated by exotic (and noxious) weeds.

The mature riparian forests are beneficial to many wildlife species. These stands provide hiding, nesting and thermal cover for a broad variety of birds and mammals. The vegetation communities provide forage for domestic livestock and for native wildlife. The cottonwood forests provide aesthetically pleasing stop-over areas for river floaters. Mushroom hunters search for morels under cottonwood stands during the spring and early summer.

The BLM has committed to meeting the following range management standards associated with vegetation found in the *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands*: Standard #2 - riparian and wetland vegetation has structural, age, and species diversity characteristic of the stage of channel succession and is resilient and capable of recovering from natural and human disturbance in order to provide forage and cover, capture sediment, dissipate energy, and provide for groundwater recharge. Standard #3 – upland vegetation on each ecological site consists of plant communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance.

The three types of noxious or invasive weed control used by the BLM on public lands are chemical, biological, and mechanical. Chemical control is used most often in cooperation with Teton County Weed and Pest District. Only federally approved pesticides and biological controls

are utilized. Local restrictions within each county are also adhered to. The RMP states that if herbicides are proposed for use, minimum toxicity herbicides will be used in conjunction with label guidance and with appropriate buffer zones along streams, rivers, lakes, and riparian areas, including those along ephemeral and intermittent streams. Projects that may affect listed plants or animals will be postponed or modified to protect the presence of these species and consultation with the Service will be initiated. The term noxious weed and invasive weed may be interchangeable, however noxious weeds are designated by the state, whereas invasive weed species are designated by the BLM. Invasive weeds common to the Snake River corridor include: spotted knapweed (*Centaurea maculosa*), Dalmatian toadflax (*Linaria dalmatica*), houndstongue (*Cynoglossum officinale*), Canada thistle (*Cirsium arvense*), and musk thistle *(Carduus nutans*).

Watershed Management/Soils Management - The BLM performs a variety of activities designed to preserve and protect soil, water, and watershed quality. Some of these activities are implementation of watershed plans, identification of heavy sediment loads, monitoring and treating soil erosion, evaluating and restricting surface development activities, and monitoring water quality. These activities at times involve field activities and the use of heavy equipment and hand tools.

The BLM Watershed Management activities include evaluating proposed projects, applying soil management practices, applying seasonal closures, and completing ground water studies. Some of these field activities involve the use of heavy machinery and hand tools. Field activities can involve developing riparian exclosures and constructing stream crossings. Other activities can involve imposing restrictions on activities such as mineral exploration and development, pipelines, powerlines, roads, recreation sites, fences, and wells.

Activities associated with soil resources may also include reclamation of abandoned mines and open shafts, removal of waste rock in floodplains or streams, or cleanup of tailings. Soil sampling and surface soil erosion studies may also be conducted. These soil resource related activities in the planning area are mainly in support of other programs.

Through water resource management the BLM seeks to maintain or improve surface and groundwater quality consistent with existing and anticipated uses and applicable state and federal water quality standards, provide for the availability of water to facilitate authorized uses, and to minimize harmful consequences of erosion and surface runoff. Water resources are also to be protected or enhanced through site-specific mitigation guidelines.

During watershed management activities, the BLM develops pollution prevention plans, ensures rights to water-related projects are filed, delineates no chemical use buffer zones, designs activities to promote reduction of channel erosion, and restores damaged wetlands or riparian areas. The BLM also provides technical expertise on other activities such as livestock ponds, waterfowl monitoring activities, reestablishing floodplains, and provides impact analyses of oil and gas development or any surface disturbance projects.

Both the Snake River and the Gros Ventre River can provide sizeable amounts of water and sediment. The Snake River was traditionally a wide, sometimes braided channel with multiple overflow channels. The Jackson Lake Dam and the almost continuous levee system have altered the flow of water and sediment in the system to the point that the land form between the levees is rapidly changing. The levee system has reduced the river's access to many of its historic overflow channels. This has resulted in changes to the channel system, as well as changes in sediment and energy transport and distribution.

The Jackson Lake Dam, originally constructed in 1910-1911, provides some moderating influence on flow fluctuations in the Snake River. It can also maintain high flows for extended periods of time. The Gros Ventre River has few significant artificial flow restricting structures, and thus has a more variable flow, and lower total volume.

Prior to 1955, there were a few short, unconnected levees along the Snake River. There were some minor bank structures as early as 1947. Between 1955 and 1964, about 13 miles of continuous levees were constructed. The levee system was expanded in later years and levee construction continues, although at a slower rate. Currently, the system encompasses about 20 miles of channel. Land use and property values have virtually assured the maintenance and expansion of the levee system in the future.

Analysis of pre-1955 photographs suggests that approximately 25% of the land that is currently within the levee system consisted of wooded islands. The percentage of wooded islands between the levees is considerably less at this time. Many of the islands have been completely removed while others are actively eroding. There is little evidence of island building.

Within the levee system, the average slope of the river is about 18 to 25 feet of channel drop per mile of channel length. Up and down stream from the levee system the river is less steep, with channel drops averaging between 13 and 22 feet per mile. This results in an overall greater amount of kinetic energy within the leveed portions of the channel. The higher energies within the leveed reaches of the river have created an overall erosion of the stream channel. However, continued building up of the gravel substrate in some portions of the river could create a risk of floods or damage to highway bridges. The channel's shape is still changing, so it is not known if the current patterns will remain constant over time.

As a result of the high bedload and high flows, the river tends to switch channels frequently. This, in combination with the artificially confined nature of the channel, has created some concern for the remaining islands within the levee system as well as for the stability of the levee system itself. A Snake River Restoration Project has been proposed by Teton County and the COE to help address this situation.

The BLM manages a relatively small amount of land within the Snake River corridor in Wyoming. This, in combination with the high percentage of private land, the levee system, and efforts to manipulate the channel within the levees suggests that the overall effect on water quality from activities taking place on BLM lands is minor in comparison to the potential presented by the surrounding lands. Recreation related activities and unauthorized dumping are the actions that are most likely to take place on BLM managed lands that could directly affect water quality.

The Snake River on the BLM parcels was assessed for Proper Functioning Condition on August 15, 1996. On all parcels, the river was determined to be in nonfunctioning condition, primarily because the river levees prevent its access to its natural floodplain, prevent regeneration of the cottonwood stands along its banks, and channelize the stream flow.

The BLM parcels contain some lentic surface water features, such as oxbow lakes and wetlands that have water tables closely tied to the stage of the river. These features are generally located away from the main recreation corridor. Within the levee system, movements of the main channel and efforts to restrain this movement can have a marked effect on the water quality of an individual water body through both erosion and stagnation behind newly constructed features.

Given the comparatively small size of these water bodies, the effect that they have on water quality in the Snake River is most likely undetectable.

Water features that exist on BLM parcels outside of the levee system appear to have water levels closely tied to the level of the Snake River. Seeps and springs that have other water sources may exist but they are not immediately evident. Conditions of the water features outside the levees tend to be less disturbed than those within. The level of grazing and the recreational activities associated with the area appear to impact the watershed.

Removal of waste rock in floodplains or streams is the principle activity associated with soil resources. Other activities may include surveying (mapping), core drilling, using truck mounted soil augers, digging soil characterization pits and shovel holes, and surface soil erosion studies. These soil resource activities in the planning area are mainly in support of other programs.

Soils found along the Snake River floodplain generally are dark, poorly drained, and have a fine sandy loam surface about 24 to 30 inches thick overlying extremely gravelly loamy sand to a depth of 60 inches or more. These soils are characterized by a fluctuating water table between 3 feet and the surface from May through July and are subject to flooding from May through June.

Flooding and high water tables put severe limitations on building site development, sanitary facilities, and permanent recreational facilities. Wildlife habitat potential is good and the potential as a gravel source is good. These soils are a poor source for topsoil and for material with which to construct dikes, embankments, or levees.

Upland areas, with slopes from 10 to 90 percent, are dominated by dark, well drained, silt loam or loam soils greater than 60 inches to bedrock. Some areas have rock fragments throughout the soil profile. These steep slopes are the main limitation to building site development, sanitation facilities, and permanent recreational facilities. Wildlife habitat potential is fair to good while the soils are a poor source for gravel or topsoil.

Wildlife and Fisheries Management - Through wildlife habitat management, the BLM in Wyoming seeks to maintain biological diversity of plant and animal species, support the WGFD strategic plan population objective levels. In order to do this the BLM maintains and improves forage productions and quality of rangelands, fisheries, and wildlife habitat; and provides habitat for threatened, endangered, and special status animal and plant species on BLM-administered public land surface in compliance with the Act and approved recovery plans.

Approximately 90 percent of wildlife program activities are in support of other resource programs such as fuels reductions, density of timber stands in deer and elk winter habitats, oil and gas exploration, timber harvest, or prescribed fires. Wildlife program activities may include: surveying, monitoring, habitat improvement activities, developing habitat management plans, creating cooperative management areas, developing stipulations and protective measures, acquiring land and easements, conducting inventories, performing livestock or forestry related activities, and wildlife and fisheries habitat improvement projects.

The BLM develops stipulations and protective measures including the authorization of withdrawals from some areas from mineral entry, limiting access of 4-wheel drive vehicles, snowmobiles, horseback riders, and pedestrians, prohibiting surface development, and imposing road closures.

Livestock-related wildlife management activities include the development of water sources; construction and maintenance of fences; the management of other resource activities to conserve forage and protect habitat; the improvement of forage production and quality of rangelands; and the improvement of range with mechanical treatment.

Forestry-related wildlife management activities include the management of timber and the promotion of cutting, thinning, planting, and seeding.

Other wildlife management activities include aiding in the introduction of species, monitoring and improving habitat, recommending habitat improvement projects, using prescribed burning, developing islands, managing access, authorizing agricultural entry, using surface protection mitigations, constructing artificial structures, using heavy equipment and hand tools, documenting resource damage, implementing stream improvement practices, developing cooperative agreements to facilitate species transplants, chemically controlling pests, exotic fish removal, construction of instream barriers to protect species from non-native invaders, and installation of revetments and fish passage structures. BLM wildlife management educational programs include the distribution of information to landowners, the public, and lessees; and developing of public education programs.

Along the Snake River, the ribbon of cottonwood riparian forest surrounded by sagebrush or open field creates extremely important habitat for a diversity of wildlife. The Snake River riparian corridor is a major migration route and breeding area for migratory songbirds, waterfowl, and raptors. The productivity of bald eagle nests along the Snake River is credited for the recovery of the entire Greater Yellowstone region (Swenson et al. 1986). The river corridor is a migration route for elk and mule deer, as well as limited crucial winter range for these species and the moose.

The wildlife resources are dependent on a functioning environment, which provides all of the elements for survival in the proper balance, and the riparian system is considered highly valuable. Human activities, i.e., “channel alteration, ground water pumping, surface diversion, impoundment, direct removal of riparian vegetation, alteration of flooding regimes, and urbanization...contaminants, recreation, grazing, and habitat fragmentation...” are having a detrimental impact to the riparian corridors of the Snake River which is resulting in degradation and losses of wildlife habitats (USFWS 1986, 1992). The current levee system has resulted in a reduction in riparian/wetland habitats.

Many avian and mammalian wildlife species use the Snake River corridor as habitat including nearly 150 species of birds, elk, moose, and mule deer.

Levee construction and other human activities have led to significant decreases in the amount and quality of spawning, rearing, and overwintering habitat for aquatic species. Increases in these resource types will be needed to promote the future viability of game and nongame fish.

Within the scope of the RMP is the goal to provide a quality recreational experience while protecting the varied wildlife and fragile habitats. Human-wildlife conflicts sometimes occur. In cases where these interactions pose a threat to human health and safety, it may be necessary to involve the WGFD or the USDA-Animal and Plant Health Inspection Service-Wildlife Services office to rectify the situation. The BLM and Wildlife Services have a Memorandum of Understanding, dated April 3, 1995, to address potential conflicts. The MOU is updated through an annual Work Plan. The BLM parcels occur within designated Human Safety Zones as identified in the Work Plan, thereby restricting corrective measures to emergency situations.

Wildlife Services also has agreements with the WGFD and the Service to take the actions necessary when human health and safety are a concern in dealing with predators or threatened and endangered species. Whenever possible, a non-lethal resolution to the conflict is the preferred outcome.

Use of lethal animal control measures (including M-44's) was eliminated from detailed analysis because of the proximity of private homes and the level of public recreation on the parcels. Using traps or poison devices to control predators or other animal species carries too many risks in this environment. No requests to use these devices to control animals have been received.

STATUS OF THE SPECIES

Species Description

The bald eagle (*Haliaeetus leucocephalus*) is a large diurnal raptor. Adult bald eagles have a white head and tail plumage and very dark brown to black wing and body plumage. The bill and cere are bright yellow as are the lower legs and talons. Juveniles are often misidentified as golden eagles, as they have primarily brown plumage (including head and tail), bill, and eyes. Bald eagles attain adult plumage at about 5 years of age. The bald eagle has a wing span up to 7 and a half feet wide and weighs between 8 and 14 pounds. Females are larger than males.

Life History

Present-day breeding occurs primarily in northern California, Alaska, Oregon, Washington, Minnesota, Wisconsin, Michigan, Maine, the Chesapeake Bay area, Florida, the tri-state corner of Idaho, Montana, and Wyoming, and in parts of Canada. The Service estimated the breeding population exceeded 5,748 occupied breeding areas in 1998 (United States Fish and Wildlife Service (USFWS) 1999).

Bald eagles are migratory and may live more than 30 years in the wild. They are monogamous and build nests that may be reused and built upon year after year, sometimes producing nests 10 feet in diameter. These birds show nest site fidelity and often nest within 100 miles of where they were hatched. Bald eagles have no more than one brood per year, laying 1 to 3 eggs. Their incubation period lasts about 35 days. The eggs are incubated by both male and female birds (Stalmaster 1987). Nestlings may out compete siblings for food and push them out of the nest. Usually 1 or 2 eaglets are produced per pair annually. Fledglings leave the nest approximately 75 days after hatching. After the breeding season, bald eagles congregate where food is plentiful, and they may continue to roost near the nest tree.

Bald eagles inhabit primarily riparian habitats in cottonwood groves along streams and rivers, and in coniferous forests. Bald eagles primarily feed on fish, but also on small mammals and carrion. In Wyoming, where water is scarce, bald eagles are found nesting away from water sources and will often feed on carrion: road kill, hunting gut piles, and winter kill. They are also known to be kleptoparasitic, stealing prey from other raptors.

Nesting Habitat - Bald eagles typically nest in forested areas adjacent to large bodies of water. Nests are most often constructed in the tops of large trees (Howell 1937, Murphy 1965) but can occur on cliffs or on the ground in treeless areas (Troyer and Hensel 1965). Besides the distance to nearest water, other features that influence nest location can include: diversity, abundance, and vulnerability of prey base; and absence of human development and disturbance (Buehler 2000).

In Wyoming, mature cottonwood groves found along streams and rivers are typically used as bald eagle nesting habitat. Nest locations usually provide proximity to a food source, good visibility from the nest, and a clear flight path to the nest (Herrick 1924).

Bald eagles in the Greater Yellowstone Ecosystem were flexible in their selection of nest sites, as long as a dependable food source was available in early spring (Swenson et al. 1986). Once this criterion was met, they tended to select the most desirable trees available (Swenson et al. 1986).

One of the most important characteristics of bald eagle nesting habitat is an open forest structure (Anthony et al. 1982). The use of dominant nest trees in forest stands with openings and edges is widespread. One breeding territory in Ohio was occupied for nearly a century (Herrick 1924). Often several alternate nests are built by one pair in a breeding territory, and in any given year, a new nest may be built or an old nest may be reoccupied (Greater Yellowstone Bald Eagle Working Group (GYBEWG) 1996).

Human Disturbance - Freedom from human disturbance is a highly important criterion for successful nesting. Breeding eagles are more sensitive to disturbance than non-breeding or wintering birds, and the early stages of the breeding cycle (nest repair, egg laying, and incubation) are the most sensitive times (Mathisen 1968, Weekes 1974, GYBEWG 1996, Montana Bald Eagle Working Group (MBEWG 1994). Eagles are more likely to abandon a nest early in the season before a bond is established or young hatch. The vulnerability of eggs or young to adverse weather if adults are flushed from a nest is also most critical in the early stages of nesting. Human disturbances, however, may still be problematic later in the season and result in premature fledging (Grier 1969).

Apparent changes in the numbers of eagles using traditional wintering areas may also be related to increased human disturbance (Fitzner and Hanson 1979). Eagles along the North Platte River in Wyoming were never observed by Reclamation biologists within the city limits of Casper, Glenrock, Douglas, or Torrington despite the presence of adequate perches along the river in these areas and the relatively dense populations of eagles four miles on either side of these towns (USBR 1981). The stretches of river passing through these towns correspond to the “high human activity” category of Stalmaster and Newman (1978) and low eagle activity in such areas is in accordance with their observations. Eagles were also found to be less likely to be observed in areas where fishermen congregated (USBR 1981). This was particularly evident along the Miracle Mile section of the North Platte River between Kortes and Pathfinder Reservoirs where eagles often perched along the river when roads were snow covered and fishermen were absent, but rarely perched in the area when fishermen could get to the river. On Pathfinder Reservoir, eagles congregated on the western shore or on the Sweetwater Arm when fishermen were present along the more accessible eastern shore. Bald eagles have been found to habituate to human disturbance with highway traffic being the least disturbing (GYBEWG 1996).

Winter Habitat - On their winter range, bald eagles may roost singly or in small groups but larger communal roosts are important and may predominate in many areas (Platt 1976). Communal roosting may have developed as information centers in response to the distribution of foods (Ward and Zehavi 1973, Hanson 1978). By congregating with other birds, an individual eagle may enhance its chances of finding unevenly distributed food supplies. Communal roosts usually are located in stands of mature old growth conifers or cottonwoods, and roosts may be several miles from feeding areas. Wintering bald eagles occur throughout the United States but are most abundant in the West and Midwest (USFWS 1983) along major river systems and large bodies of water in the mid-western states, Chesapeake Bay region, Pacific Northwestern states, and states of the intermountain west, including Wyoming, Utah, Colorado, New Mexico, and Arizona.

An abundant, readily available food supply in conjunction with one or more suitable night roost sites is the primary characteristic of occupied bald eagle winter habitat. The majority of wintering bald eagles are found near open water where they feed on fish and waterfowl, often taking those that are dead or vulnerable. When suitable habitat conditions exist, particularly lack of human disturbance, wintering bald eagles will also forage in terrestrial habitats capturing small and medium sized mammals (e.g., prairie dogs and rabbits) or scavenging carrion or road kill, and winter mortalities of big game or livestock (USFWS 1983).

Inclement weather is also a major impetus for communal roosting. Roosts are usually located on the leeward sides of mountains, woodlots, or in protected canyons. Communal night roosts are used more often during days of winds greater than 17 km/hr (Steenhof et al. 1980) or during periods of inclement weather (Anderson and Patterson 1988). Platt (1976) observed that the most protected stand on the wintering site was consistently used as a roost during severe weather.

Large, live trees in sheltered areas provide a more favorable thermal environment and help minimize the energy stress encountered by wintering eagles. Communal roosting also may facilitate pair bonding. Freedom from human disturbance also is important in communal roost site selection (Steenhof et al. 1980, USBR 1981, USFWS 1986, Buehler et al. 1991). Continued human disturbance of a night roost may cause eagles to abandon an area.

Anderson and Patterson (1988) characterized bald eagle winter roosts in Wyoming. Twenty-three roosts were located, which contained from one to 24 eagles. Roosts were located on slopes with northeasterly aspects and typically in forest stands with high densities of conifers and snags. These forest stands had larger and more open trees than the surrounding forest.

The number of eagles using a roost and times of arrival to and departure from the roost are influenced by temperature, precipitation, and wind conditions. During moderate weather, eagles usually leave the roost at dawn, and may ride thermal currents in the vicinity of the roost for up to a half hour before departing for feeding areas (USBR 1981). Eagles have been observed to fly over 15 miles from their feeding areas to roosting sites (Swisher 1964).

Hunting Behavior - The bald eagle typically hunts from perches or while soaring over suitable prey habitat. Prey is often taken off the wing including snatching fish from surface waters, snaring waterfowl in the air, or pouncing on small mammals. When it is available, carrion is also eaten. General foraging habitats include nearly all upland and aquatic habitats that support sufficient prey species. In Wyoming, suitable general foraging habitats can include grasslands, shrublands, streams, rivers, lakes, and reservoirs. Concentrated foraging habitats are typically habitats that support high densities of prey species and can often be a reliable source of prey for wintering bald eagles. In Wyoming, concentrated foraging habitats can include big game crucial winter ranges, ice-free water bodies that support fish and waterfowl during the winter, cattle and sheep stockyard operations, and big game road kill.

Diurnal Perches - Diurnal perch sites are important components of bald eagle habitat. Perch sites serve a number of functions such as vantage points for hunting, observation posts to increase vigilance against predators, locations for loafing and sunning, and in some cases diurnal perches double as night roosts. Selection of a day perch by bald eagles is determined primarily by the location of the food resource and secondarily by the visibility provided by the perch site. When available in appropriate locations and of sufficient size, trees are preferred perches (Stalmaster and Newman 1979, Steenhof et al. 1980). Trees must be strong enough to support an eagle's weight, offer unobstructed views of potential food sources and the surrounding area, and provide for easy landing and takeoff. Preferred species possess the physical characteristics (size and

growth form) and location (near open areas, proximity to a food source) required by eagles. Cottonwoods (*Populus* spp.) for example, are preferred along the Platte River in Nebraska (Vian and Bliese 1974) because of their large size and proximity to water. Approximately 94 percent of the eagles along the Nooksack River in Washington were perched within 164 feet (ft) of the river (Stalmaster et al. 1979). Bald eagles tend to select trees which are bordered by an open area (Steenhof et al. 1980). Riverbanks, rangeland, cropland, creeks, and roads are all important edge components.

The single most important feature of potential perch sites is that they be located close to and in view of a potential food source (Vian and Bliese 1974, Stalmaster and Newman 1979, Steenhof et al. 1980). Perching comprises much of the eagles' day. In one study, perched eagles accounted for nearly 75 percent of all observations and over 80 percent of sightings recorded along the Platte River between 1977 and 1981 (USBR 1981). Perch site preferences were related to the availability of trees, proximity to foods, water conditions of rivers and lakes, and overall visibility. The importance of perch sites close to water was apparent as nearly 98 percent of the eagles perched near reservoirs and 89 percent of those near rivers were within 60 meters of the shoreline. Deciduous trees, the most frequently observed perch sites, were typically cottonwoods located adjacent to water.

Freedom from human disturbance is important in diurnal perch site selection and may influence the distribution of perched eagles in an area. Stalmaster and Newman (1978) found that eagles usually avoided areas of "high human activity." Once disturbed on the feeding grounds eagles may not return to that area to feed. During particularly severe weather, continued disturbances may sufficiently stress eagles to cause them to leave the area.

Diurnal perches located close to the nest are important for hunting, loafing, and monitoring the nest. Favored perches are used consistently year-after-year, are generally 100 to 200 meters from the nest tree, and provide an unobstructed view of the nest (Herrick 1924).

Foods - The availability of food is probably the single most important factor affecting bald eagle distribution and local population sizes. Bald eagles congregate at locally abundant easily exploitable food sources, and population densities fluctuate with food availability. Fish are an important food of the bald eagle throughout much of its winter range. Fish are the primary staple of the winter diet along watercourses and on lakes, although other food sources are exploited elsewhere (Wright 1953, Southern 1964, Ingram 1965, Fitzner and Hanson 1979). Vian and Bleise (1974) concluded that fish made up the bulk of the diet of eagles along the Platte and North Platte Rivers in Nebraska although waterfowl were abundant. United States Bureau of Reclamation (USBR) biologists documented that fish was an important winter staple of eagles along the Platte River (USBR 1981).

Waterfowl are also important in the diet of bald eagles. Waterfowl can comprise most of the diet of eagles in areas where fish are not plentiful or readily caught because of ice conditions (USBR 1981). Wintering eagles in Missouri fed primarily on dead and crippled geese (*Branta canadensis*). In Nebraska, pellet analyses and observations indicated that waterfowl were a major food source, particularly on reservoirs.

Bureau of Reclamation's bald eagle studies conducted between 1978 and 1981 (USBR 1981) found that most wintering eagles using North Platte and Platte Rivers aquatic areas were associated with open water and waterfowl concentrations. Over 50 percent of the feeding observations reported during three winters of observations involved waterfowl. Eagles observed on the ice were within 100 ft of waterfowl in 55 percent of 1109 observations. Bald eagles were

observed flying over, chasing, and eating ducks, geese, and coots (*Fulica americana*). Most of the feeding observations were of ducks, and all of the roosts contained some pellets composed of waterfowl remains. In many instances where suitable perch trees were present nearby, eagles rested on the ice in close proximity to waterfowl. Ducks and geese maintained ice-free areas in reservoirs and eagles sometimes perched on uplifting and irregularities on the ice near waterfowl.

Fish and waterfowl carrion are another important component of the eagles' diet (USBR 1981). Immature eagles relied heavily on these food items at several reservoirs during the survey period. Nearly all eagles associated with carrion and 75 percent of those associated with waterfowl were immature. On some Bureau of Reclamation reservoirs, immatures outnumbered adults, particularly during the early winter when waterfowl numbers were highest. As less adept hunters, subadults are more dependent on concentrated food resources and carrion throughout their wintering range and often congregate around abundant food sources (Sherrod et al. 1976, Schwilling 1980).

The extent of the southern migration in winter probably depends on the severity of the weather. As water sources freeze, and fish, waterfowl and carrion are no longer available to eagles, they tend to move further south in order to find more easily exploitable food sources.

In Nevada, Utah, Wyoming, and portions of western Colorado, however, some bald eagle winter concentrations were not related to the existence of water but were associated with carrion provided by big game and domestic sheep (*Ovis* spp.) (Swisher 1964, Platt 1976, Anderson and Patterson 1988). Carrion provides an important dietary supplement in some areas and is the primary food source in others. Deer (*Odocoileu*s spp.) carcasses are commonly eaten (Ingram 1965, Stalmaster et al. 1979) as are those of cattle (*Bos taurus*) and sheep (Hancock 1964, Anderson and Patterson 1988). Food habits of wintering eagles within the Greater Yellowstone Ecosystem (GYE) reflect the seasonal availability and abundance of food on ungulate winter ranges throughout the GYE due to winter mortality, predation and hunting.

Studies conducted at Jackson Canyon, Wyoming between 1975 and 1977 included an analysis of prey remains and cast pellets (Lund 1978). Antelope, coyote, and waterfowl, in that order, were the most common components of pellets with some sheep, beaver (*Castor canadensis*), and raccoon (*Procyon lotor*) also identified. Although antelope and waterfowl were frequently identified from Wyoming roost castings collected in 1979 and 1980 (USBR 1981), over 50 percent of most pellet remains were comprised of rabbit hair and sheep wool. It should be noted, however, that studies of raptor diets based on pellet contents are highly biased and these biases are exaggerated in raptors which digest most bone material small enough to swallow. Cast pellet analysis under-estimate the importance of fish in the eagle diet as the bones and scales may be completely digested and pellets may not be formed (Brown 1974). For a fish-eating species such as the bald eagle, this causes serious errors in determining its true food habits in any quantitative way (Jenkins 1980).

Wintering bald eagles in Wyoming generally occur in areas associated with large, ice-free water bodies and near winter concentrations of ungulates, livestock, waterfowl, and/or fish. The distribution of bald eagle nesting and winter roosting areas is associated with habitat availability and amount of human disturbance. Most open habitats with sufficient prey base in Wyoming can be utilized for foraging by bald eagles. Foraging bald eagles are less sensitive to human disturbance and will tolerate more human activities in foraging habitats than they will near nesting and winter roosting areas. As a result, human activities are less restrictive to the distribution of foraging bald eagles than to nesting or roosting eagles.

Nesting eagles are also similarly dependent on reliable sources of food, especially fish and waterfowl. Primary feeding areas are large bodies of open water, and rarely smaller streams or ponds (Leighton et al. 1979). In the Greater Yellowstone Ecosystem, a stable food source, which was available from early spring, appeared to be the most important factor in breeding area selection by eagles (Swenson et al. 1986). Swenson et al. (1986) found that the differences in movements, breeding success, nest site selection, and nesting chronology among bald eagles in the Greater Yellowstone Ecosystem were primarily due to differences in the amount and timing of food availability. During the breeding season mammalian food becomes less important as fish and aquatic birds become available.

Elsewhere, nesting eagles appear to rely on a greater variety of foods. Bald eagles in Maine preyed upon or took as carrion at least 34 species of invertebrates (Todd et al. 1982). Use of rabbits, songbirds, invertebrates, small animals and carrion has also been reported for nesting eagles by Smith (1963), Retfalvi (1970), Sherrod et al. (1976), and Jenkins (1981).

Although a variety of food can be taken, fish composed 77 percent of the food item remains collected at bald eagle nests in interior Maine (Todd et al. 1982). Bald eagles nesting on offshore coastal islands fed primarily on seabirds and waterfowl. In north-central Minnesota, the diet of breeding eagles was 90 percent fish (Dunstan and Harper 1975). Studies in Ohio showed that nesting bald eagles fed primarily on fish (Herrick 1924). At San Juan Island, Washington, fish composed 51 percent of the breeding season diet (Retfalvi 1970).

Bald eagle prey selection is determined largely by availability. In Maine, eagles focused on the chain pickerel (*Esox niger*) spawning run in April, then on the sucker (*Catostomus* spp.) spawning run in May (Todd et al. 1982). Birds accounted for 68 and 47 percent of the diet of bald eagles in some areas of the Greater Yellowstone Ecosystem (GYE) while fish made up 67 percent of the diet in other areas of the GYE in response to habitat differences and prey availability (Swenson et al. 1986). In one area of the GYE, aquatic birds comprised the majority of food taken by bald eagles later in the breeding season. However, early in the breeding season these same eagles heavily utilize cutthroat trout (*Salmo clarki*), corresponding with peak spawning activity in shallow streams. When waterfowl became more available during the postnuptial molt period, they were readily taken by eagles at that time.

Population Dynamics

It is estimated that the bald eagle population numbered 250,000 to 500,000 bald eagles living on the North American continent before the first Europeans arrived. Loss of prey species, hunting, pesticide use, and loss of habitat are the major causes of population declines.

A bald eagle recovery plan was established in the mid-1970's, resulting in the Service dividing the lower 48 states into 5 recovery regions. Recovery plans for each region were developed with goals and tasks for recovery. Since 1974, the number of occupied breeding areas in the lower 48 states has increased by 462 percent, and since 1990, there has been an additional 47 percent increase in bald eagle numbers (USFWS 1995). In 1995, the bald eagle was reclassified as threatened, and recently the bald eagle has been proposed for delisting (USFWS 1999).

In Wyoming, the bald eagle falls within the Pacific Bald Eagle Recovery Plan (USFWS 1986). The primary objective for this area is to provide secure habitat for bald eagles within the 7-state Pacific recovery area and to increase population levels in specific geographic areas to the extent that the species can be delisted. Management goals are to have: (1) a minimum of 800 nesting pairs in the Pacific Recovery Area, (2) an average reproductive rate of 1.0 fledged young per pair,

with an average success rate per occupied site of not less than 65 percent, (3) the attainment of breeding population goals in at least 80 percent of the management zones with nesting potential, and (4) stable or increasing wintering populations. Jenkins (1980) summarized sightings of bald eagles in Wyoming obtained from annual Audubon Christmas Bird counts from 1963-1979. Observers recorded between five and 176 eagles, on surveys totaling 195 to 2,805 miles in length. Bald eagles are routinely counted during mid-winter waterfowl/eagle surveys conducted by the Wyoming Game and Fish Department. Between 1974 and 1979, biologists recorded an average of 55 bald eagles (range of 22 to 132) in the Central Flyway (that portion of Wyoming east of the Continental Divide) (Jenkins 1980). Low-level fixed-wing aircraft censuses of wintering golden eagles in east-central Wyoming (between Casper, Lusk, Mule Creek Junction and Midwest) conducted annually from 1965 until 1979 by the Service revealed between 13 and 49 bald eagles annually (average of 24) (Jenkins 1980).

Currently, the largest nesting concentration of bald eagles in Wyoming is in the northwest corner of the state, in the Greater Yellowstone area. Bald eagle nesting has also been documented along several major drainages throughout the state. Results of annual surveys indicate bald eagle populations within the state are increasing and have exceeded management goals since 1987. In 1999, 97 bald eagle pairs produced 85 young in Wyoming.

Status and Distribution

Laws protecting the bald eagle were implemented as early as 1918 with the Migratory Bird Treaty Act, the domestic law that affirms the United States' commitment to four international conventions with Canada, Japan, Mexico and Russia for the protection of shared migratory bird resources. In 1940, the bald eagle and Golden Eagle Protection Act was passed, prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. Take includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The Endangered Species Act of 1973, as amended (Act), 16 U.S.C. 1531 *et seq*. is the most recent federal law which offers protection to the bald eagle. On February 14, 1978, the bald eagle was listed under the Act as an endangered species throughout the lower 48 States except in Michigan, Minnesota, Wisconsin, Washington, and Oregon, where it was designated as threatened. On July 12, 1995, the Service reclassified the bald eagle from endangered to threatened throughout its range in the lower 48 states (USFWS 1995). Most recently (July 6, 1999), the bald eagle was proposed for delisting (USFWS 1999). The proposal has not been finalized or withdrawn to date.

The bald eagle historically ranged throughout North America except for extreme northern Alaska and Canada and central and southern Mexico. They nest from Florida to Baja California, and Labrador to the western Aleutian Islands of Alaska.

In Wyoming, bald eagles are often not dependant on habitat attributes provided by public lands, but rather are opportunistic inhabitants that will move from area to area where conditions and food sources are most favorable. Bald eagles can be found throughout the winter in both prairie and forested areas. Typically winter migrant bald eagles in Wyoming arrive in late winter, depending on the severity of weather conditions in their northern range.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed State or Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

The action area is defined at 50 CFR 402 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action". For the purposes of this consultation, the Service defines the action area to include (1) approximately 981 acres of BLM administered public land surface along the Snake River in Jackson Hole, Teton County, Wyoming, and (2) approximately 15,123 acres of surface land owned by other entities (i.e. Federal, State, Local Government, Private) under which BLM administers the Federal mineral estate in the planning area. This action area includes all lands within the planning area that could potentially be impacted by decisions made in the RMP.

Within the action area, there are approximately 23 miles of the Snake River, 4 miles of the Gros Ventre River, and associated wetlands. There are varied and intermingled land surface ownerships and overlapping mineral ownerships. The completed Snake River RMP will not include planning and management decisions for lands or minerals within the action area that are privately owned or owned by the State of Wyoming, USFWS (National Elk Refuge), or local governments. The planning area is bounded on the east, south and west by the Bridger-Teton National Forest (BTNF), and on the north by the Grand Teton National Park (GTNP) boundary.

Historic activities within or adjacent to the action area include residential, urban, commercial, industrial, and agricultural development, road construction, development for recreational use mining, airport construction, ski area development, levee construction and maintenance, and dam construction.

Teton County's popularity has grown over the past decades bringing with it dramatic increases in population and development. Much of Teton County's ranchlands with its pastures, hay meadows, and broad sweeping vistas was zoned for development at one unit per three to six acres. Dividing ranches of a thousand acres into three- to six-acre lots has changed the rural character of the area. However, citizens and commissioners have grouped and planned together to maintain and preserve, to the extent possible, the open space, wildlife habitat, and wide vistas characteristic of the area. Towns, communities, and large tract subdivisions in the area are numerous and include Jackson, Kelly, Moran, Wilson, Alta, Rafter J, Spring Creek Ranch, Boyles Hill (Indian Springs), Teton Pines, Teton Village, Grand Targhee Resorts, Aspens, and Hoback Junction. Ski areas adjacent to the action area include Jackson, Jackson Hole, Grand Targhee, and Snow King ski areas. Commercial/industrial development in the area often cater to the resort developments and has included basic commercial services such as auto and equipment repair, food and beverage distributors, cleaning and linen service and supply, shipping and receiving, and construction services. Recreational developments have included neighborhood parks, ball fields, swimming pools, tennis and basketball courts, golf courses and skating rinks. Other necessary human service related developments include hospitals, fire departments, and utility systems such as electricity lines, water supply lines, wastewater treatment plants and solid waste disposal (Jackson/Teton County 1993).

In 1999, the U.S. Department of Transportation Federal Aviation Administration completed an Environmental Assessment (EA) and Biological Assessment for the proposed improvements to

the Jackson Hole Airport. Proposed improvements to the airport included adding 568 feet of new pavement to the runway, constructing a 300 foot by 150 foot paved safety area at the end of the north runway, constructing runway edge lighting, taxiways, and holding aprons, relocating glide slope and visual landing aids, replacing visual approach slope indicators, providing for runway protection zones 1,700 feet in length at the north and south ends of the runway, reconstructing the existing runway, and installing steady burning runway end identification lights. After completing the EA and BA, it was determined that this action would have no effect to bald eagles (Federal Aviation Administration 1999, Parrish 1995).

The U.S. Army Corps of Engineers (COE) has constructed numerous levees and performed numerous levee maintenance projects within the action area. This effort has occurred over the past 50 years in an effort to protect private property from flooding. As a result, 20 identifiable, noncontinuous levees confine approximately 25 miles of the Snake River between Moose (in Grand Teton National Park) and South Park. The effort to control this wild and ever-changing river has resulted in significant alterations to its character and the entire Snake River riparian zone. It is widely accepted that the construction of the present levee system has had numerous negative impacts to fish, wildlife, and vegetation along the Snake River and continued maintenance of the levee system will further perpetuate and exacerbate these impacts. Levees allow for housing developments in the floodplain and within bald eagle habitat (COE 1990, 1994). Between 1978 and 1989, at least 3 instances were documented where bald eagles relocated in an apparent response to the construction of houses. In addition, one nesting location was permanently abandoned due to the development of the Solitude Subdivision in 1981. The importance of river diversity pertaining to nest site selection by eagles has been found to be highly correlated, as is low human disturbance. A River Diversity Index (RDI) has been developed to describe the diversity of different stretches of river. It has been found that stretches of river that are used frequently by bald eagles during daily activity patterns have higher RDI's than lower use river sections. Applying the RDI to the levee system indicates that as a river reach becomes more restricted by levees, the lower the RDI value and corresponding low eagle use would be expected (COE 1989). More recently the COE has completed a feasibility study to attempt to reverse some of the detrimental effects of the levee system and restore fish and wildlife habitat as well as the integrity of the stream channel system. Restoration measures may include: construction of eco-fences, excess gravel removal, placement of logs and root wads designed to protect and reestablish wetland and riparian habitats, and creation of side channel backwater areas and off-channel pools (COE 2000).

Upstream from the action area, the U.S. Bureau of Reclamation constructed the Jackson Lake Dam. This dam was authorized in 1904 and completed in 1916 as part of the Minidoka Project. The dam stores Snake River headwaters for irrigation of lands in southeastern Idaho and for flood control. It was constructed at the outlet of a natural lake. The quantity and velocity of water flowing in the Snake River are, in part, dependent on the amount of water released from Jackson Lake Dam (COE 2000, U.S. Bureau of Reclamation & National Park Service 1984).

Downstream from the action area, the Service recently consulted on the proposed Canyon Club Development located in Teton County, and its effects on the bald eagle in accordance with Section 7 of the Act. The proposal involved the construction and operation of an 18-hole golf course and an associated 71-home residential community within a 359-acre property. The project includes seven major project features: 1) a golf course, 2) residential homesites, 3) utilities, 4) roads and access, 5) pond creation, 6) stream restoration and enhancement, and 7) bank stabilization measures.

A high-tension 730 Kv transmission utility line currently traverses the entire length of the Canyon Club property. This line also runs north and south of the project area and provides power to the greater Jackson, Wyoming area. The proposed project calls for burial of the power line across the entire Canyon Club property. Additional line would also be buried, originating on the eastern boundary of the Snake River Canyon Ranch and terminating at the southeast corner of the River Bend Ranch. In total, 20,245 linear feet (3.8 miles) of power line would be buried, of which 7,425 linear feet (1.4 miles) are within the Canyon Club property. Distribution power lines as well as other utilities would be buried within the project area. Generally, the utility lines would be buried within road and travel lanes so that they are not visible, yet would remain easily accessible for service and maintenance. Connections from utility lines to individual lots shall also be underground. All construction activities related to the transmission power line burial would occur either outside of the bald eagle nesting season (temporal avoidance) or no closer than ¼ mile away (spatial avoidance).

A community water system is proposed to serve the Canyon Club. Initial estimates suggest that two or three wells with variable speed pumps would be required to meet culinary water uses, including potable water and fire protection supply needs. Preliminary calculations estimate the maximum daily demand for water at a total of 50,400 gallons per day, with single-family residential units accounting for approximately 90 percent of this use. The golf course maintenance building, clubhouse, lounge, and locker facilities would account for the remaining use. Landscaping water needs will be drawn from the Snake River.

A community wastewater treatment system is proposed for facilities at the Canyon Club. Primary and backup leach fields would be placed in upland locations that are outside the 100- year flood plain and possess good percolation characteristics. These leach fields would be permitted by the Wyoming Department of Environmental Quality (WDEQ). Sewage would be pre-treated by septic tanks located at the clubhouse, maintenance site, and individual homes. Treated sewage would then flow to a community soil absorption field located out of the floodplain in the area noted as the “Driving Range.”

As a result of the Canyon Club development, the Service anticipates the loss of 3 bald eagle nesting territories (i.e., Cabin Creek, Martin Creek, and Dog Creek). The loss of these 3 nesting territories results from the take of 3 pairs of nesting bald eagles in the form of harm or harassment. Harm or harassment is expected to result from increased disturbance near nesting areas and the effects of greatly increased human activity in parts of the project area. In addition, all available bald eagle habitat in this ecosystem appears to be currently occupied by other bald eagles, which implies bald eagles displaced from the project area would have to further displace existing nesting pairs in order to successfully reproduce elsewhere. Therefore the Service anticipated the loss of 6 adult bald eagles for the life of the project. The anticipated loss of these 3 nesting territories will subsequently result in the loss of the reproductive output of these 6 adult bald eagles. The Service anticipated the loss of 12 juvenile bald eagles (2 chicks/nest/year) during the 2 year construction period.

Status of the Bald Eagle Within the Action Area

Nine bald eagle nesting territories were active along the Snake River in the action area in 1999 with one potentially being located on a BLM parcel (BLM 2003a). Three other nesting territories were located in the action area on split-estate lands with federal mineral activity authorized through the Snake River RMP (BLM 2003a). None of the nests are situated such that a federal authorization would be required for access to adjacent private lands; therefore, no interrelated, interdependent situation would exist. Three of the nests, including one with federal minerals, have

conservation easements. Five of the nests have some degree of line-of-sight to the Snake River. Some of the nesting territories have 2 and 3 alternate nests. No specific winter-roost or concentration areas have been identified in the action area (BLM 2003a).

Along the Snake River, the bald eagle is considered a year-round resident with an influx of winter residents and migrants during the spring and fall. Swenson et al (1986) found that bald eagle breeding along the Snake River occurred primarily in the riparian zone. The riparian vegetation was dominated by Engelmann spruce and subalpine fir at the higher elevations, by blue spruce and narrowleaf cottonwood at intermediate elevations, and by narrowleaf and black cottonwood at lower elevations. Bald eagles along the Snake River located the majority of their nests in close association with a reliable spring food source. Rivers in the area were all ice-free at the onset of nesting; therefore, fish and waterfowl are highly available at that time. In addition, nearly all nests along the Snake River were located near an important spawning stream for spring spawning fish species such as cutthroat trout (*Salmo clarki*) and Utah suckers (*Catastomus ardens*). Not only did these vulnerable spawning fish provide an important and available food resource, but foraging at this time may have been difficult in the main river when it is silt-laden during spring runoff. The peripheral spawning streams remained relatively clear during the spring. The large numbers of wintering ungulates in the Snake River Valley provided carrion during the early part of the nesting season (Swenson et al. 1986).

The action area is included within the Wyoming portion of the Greater Yellowstone Ecosystem, which according to the Pacific Bald Eagle Recovery Plan (1986), contained only 17 nesting territories in 1986 (USFWS 1986). By 1999, the number of nesting territories in the Wyoming portion of the Greater Yellowstone Ecosystem had risen to 59. All 59 known bald eagle nesting territories were surveyed by the WGFD in 1999 and 58 of those territories were occupied. Of those 58 nests occupied in 1999, 33 nests were successful with 47 young fledged (WGFD 2000).

Within the Snake River BLM planning area, there are currently 15 known bald eagle breeding territories. Fourteen of the known bald eagle territories within the planning area are located on private land. One territory is located on BLM-owned surface land. Thirteen of the fifteen known territories contained active breeding pairs in 2003. Of the thirteen active breeding pairs in 2003, seven fledged young while six failed to fledge any young. Of the seven successful nesting attempts, 9 young bald eagles were fledged. (Susan Patla, Personal Communication, Nongame biologist WGFD).

Factors Affecting the Bald Eagle and/or its Environment Within the Action Area

Threats - The decline of nesting bald eagle populations in the lower 48 states during the last century has been attributed to several factors including habitat loss or alteration, environmental contamination, poisoning, shooting, and collisions and electrocutions. However, with the banning of DDT and the signing and enforcing of numerous protection laws, the bald eagle population is currently recovering.

Habitat loss - Habitat loss includes the physical disturbance of habitats associated with development and with human activities that can deter eagles from otherwise suitable habitats. Bald eagles are particularly sensitive to human activities near active nests and winter roosting areas. Unfamiliar or new activities near active nests can be detrimental during egg incubation and brooding periods. Disturbance can flush adults from nests and expose eggs or young to adverse weather conditions or deprivation of food, and thus decrease hatch rates and young survivability (USFWS 1995). Human activities near active winter roosting areas may cause eagles to abandon these habitats and expend energy finding other suitable roost areas. Additional energy use and

added stresses can lead to general deterioration in health condition and possibly affect survivability and reproductive success. Human activities near active nests may disrupt nesting activities or may cause nest abandonment which can comprise the reproductive potential for that breeding season (Grubb et al. 1992).

Habitat loss due to development of riparian areas for agricultural, urban, and recreational uses is another major concern for the bald eagle. Human disturbances in and around eagle habitat can also result in nest failure or abandonment of nesting, foraging, or roosting areas. Loss of habitat also occurs due to a lack of regeneration of the cottonwood trees – a preferred roost and nest tree species. Lack of cottonwood regeneration results from livestock grazing and to a lesser extent the altering of streams and rivers for the construction of reservoirs and dams due to the lack of overbank flooding necessary for growth of new cottonwood stands.

Disturbance - As previously stated, bald eagles prefer areas with little human disturbance for nesting and other activities (Fraser 1985, Greater Yellowstone Bald Eagle Working Group 1996), Montana Bald Eagle Working Group 1994, Anthony et al. 1995, Stalmaster and Newman 1978). Responses of bald eagles to human disturbance vary depending on the eagle individual/pair, and the type, intensity, duration, time of year, predictability, and the location of human activity (GYBEWG 1996). The distance to a water body increased as the recreational use of the water body increased (Swenson et al. 1986). All the bald eagle nests on Yellowstone Lake, Wyoming, were on the roadless south shore (Murphy 1965). The north shore is paralleled by a heavily traveled highway that permits access for a wide range of human recreational activities.

Documented causes of nest failure or abandonment include climbing to an active nest, snowmobiling, aircraft activity, nearby logging, deer poaching, land clearing, and construction (Cunningham 1960, Weekes 1974, Dunstan and Harper 1975). Bald eagle nesting patterns changed in response to increased human developments on the San Juan Islands in Washington (Newman et al. 1977). As shoreline development or human activity increases, nests often seem to be distributed further inland (Whitfield et al. 1974).

Contaminants - Before the use of organochlorine-based pesticides including dichloro-diphenyl-trichloroethane (DDT) was banned in the U.S. in 1972, bald eagle populations declined significantly. The use of dichloro-diphenyl-trichloroethane (DDT) and other organochlorine compounds became widespread after World War II. DDT was used as an insecticide to control mosquitoes in riparian and coastal areas. It was determined that dichlorophenyl-dichloroethylene (DDE), a breakdown product of DDT, accumulated in the fatty tissues of adult females birds, including bald eagles, impairing the release of calcium in formation of egg shells. In 1972, DDT use was banned from use in the United States after bald eagle populations plummeted due to reproductive failure caused by thin egg shells. Today, contaminants may still affect the survival and reproductive success of the bald eagle as the use of regulated pesticides and poisons still accounts for bald eagle deaths in many of the western states, where these chemicals are used to control rodent pests and coyotes (USFWS 1995). Intentional poisoning of coyotes with carcasses baited with poison may also attract bald eagles. Residues from DDT and other compounds from both historical and present uses can still contaminate prey species and be accumulated in bald eagle tissues. In addition, lead and mercury contribute to bald eagle poisoning and mortality as well.

Long-term exposure to environmental contaminants is also a concern in the recovery of this species. Lead can poison bald eagles when they ingest prey that contains lead shot or fragments, or where the prey has assimilated lead into its own tissues. Mercury exposure is also a concern in some parts of the country. Exposure to high levels of mercury can result in neurological problems

that affect flight and other motor skills and can alter and reduce hatching success in bald eagle eggs (USFWS 1995).

Electrocutions and collisions - Electrocutions and collisions due to power lines are another cause of eagle mortality. Collisions with vehicles may also pose a threat to eagles foraging on road kills. Current research is helping to establish guidelines to create safer utility lines utilizing anti-perch devices.

As early as 1922, researchers noted the electrocution of raptors. However, not until the 1970's did researchers become aware of the magnitude of the problem. Franson et al. (as cited in Avian Power Line Interaction Committee (APLIC) 1996) summarized that 12 percent of the known bald eagle mortalities were the result of electrocution. Electrocution deaths of bald eagles have been documented across the country including in Wyoming (APLIC 1996). Between 1986 and 1996, electric utility company records from across the western United States and Canada showed that 118 bald eagles and an additional 358 unidentified eagles were electrocuted (Harness 2002). In predominantly treeless areas, which characterize much of Wyoming, power poles may be the only perches available to bald eagles. As the action area does contain much forested habitat, it is unknown whether electrocutions pose a considerable threat to bald eagles there.

Although not within the action area, bald eagle mortality from electrocution by small distribution power poles and collision with small distribution power lines common to all oil and gas development and to a lesser extent to residential and commercial development was documented in 2000 and 2001 in Montana's Powder River and Billings Resource Management Plan project area (Schomburg 2001). Data were collected from 303 carcasses from 1996-2001, and from 273 carcasses in 2000 and 2001, respectively. Causes of death of 23 raptor carcasses were attributed to mid-span collisions, with 21 identified golden eagles (*Aquila chrysaetos*) and 1 bald eagle (Schomburg 2001). Causes of death of 280 raptors were attributed to electrocution, with 219 identified as golden eagles, as 4 bald eagles, and 11 as either golden or bald eagles (Schomburg 2002).

Shooting - Illegal shooting still poses threats to individual bald eagles. Increased law enforcement and public awareness have reduced shooting deaths to a small fraction of the number of shooting mortalities that once occurred in the early 1900s (USFWS 1995).

EFFECTS OF THE ACTION

The Proposed Snake River RMP authorizes activities in a number of programs including Cultural and Natural History Resources, Fire Management, Lands and Realty, Livestock Grazing, Minerals and Geology, Off-Highway Vehicles, Paleontological Resources, Recreation, Socioeconomics, Soils, Vegetation, Watershed, and Wildlife and Fisheries. The potential effects of these activities on bald eagles are described here.

Direct and Indirect Effects

Direct effects are effects that result directly or immediately from the project on the species. For example, actions that would immediately remove or destroy habitat or displace the species from its habitat or an area would be considered direct effects. Indirect effects are effects that are caused by, or result from, the proposed action and occur later in time after the proposed action is completed. Potential effects could result from (1) the displacement of bald eagles from the area by human activity (e.g., nest or roost site disturbance), (2) loss or alteration of habitat associated with the proposed action, or (3) death of bald eagles as a result of electrocution by or collision

with power distribution lines or other structures necessary for mineral development. The Proposed Action is the approval of the new Snake River Management Plan and the subsequent management of the Snake River Planning area as per the Snake River RMP for up to 15 years. Since (1) there is such a lengthy time period for the life of the proposed action, (2) direct effects could occur under the proposed action for up to 15 years, and (3) the indirect effects resulting from the proposed action may be combined with direct effects or be sufficiently difficult to distinguish from direct effects, the two types of effects are not differentiated here but instead are discussed jointly in the following discussion.

Analysis for Effects of the Action

Cultural and Natural History Resources /Paleontological Resources - Actions associated with cultural resources include: class I (literature search), class II (statistical sample ground survey), and class III (extensive ground surveys) inventories, and increased vehicle traffic, and human activities associated with these inventories.

If an archeological site is discovered, the associated inventory activities would be localized and limited to no more than a few acres. Any impacts are expected to be minimal. Actions associated with an archeological dig site include access or road building, increased vehicular traffic, and increased human activity. Human disturbance due to class II or class III inventories may disturb species but effects would be minimal. Increased vehicle traffic involved with the inventory may increase collisions with species but this impact is considered discountable. Likewise, due to the limited nature of these activities, vehicle emissions and noise disturbances are considered insignificant.

Bald eagles could be disturbed by human presence during a cultural inventory leading to an adverse effect. If this inventory were conducted during the mating, nesting and brood-rearing seasons within a distance that caused the eagles to alter their behavior, reproductive success could be compromised. Likewise, inventories along the river where foraging occurs could alter foraging success, and have an adverse impact on reproductive success. While it has been identified that cultural properties are not likely in the river channel, winter time when the water level is lowest would be the most appropriate season to conduct such inventories. Human presence in the river area during this season could adversely affect foraging in areas already reduced by the low water. Human presence also could impact winter roosts or nests resulting in disturbance to bald eagles.

Fire Management - Under the preferred alternative, the use of prescribed fire will not be authorized under the Snake River RMP. In the case of wildfires, the use of aerial fire suppression agents, surfactants, and foaming agents could be used for emergency fire suppression activities. Emergency stabilization and rehabilitation may be completed following a wildfire. Activities could include seeding with native or nonnative species, noxious weed control, erosion control, and repairing or building temporary fencing to replace fencing burned in the fire. Fire suppression would generally benefit the wildlife habitats as these are already in limited quantity.

Generally, the wildfire season would be late spring through early fall which coincides with avian reproductive activities. However, the potential exists for adverse impacts to bald eagles due to human-wildlife interactions (i.e., a higher than usual, sudden human presence to suppress a fire or extended human presence for rehabilitation), water-drops directly into nesting habitats, or habitat alterations from construction of fire breaks or roads. Emergency consultation with the Service will be conducted following initiation of BLM wildfire suppression activities. Human presence associated with the response to wildfires in nest and roost buffer zones and important foraging

areas could result in disturbance to bald eagles. Likewise, habitat removal or degradation could occur as part of fire suppression activities.

Lands and Realty Management- Maintaining and encouraging additional public access to the parcels could adversely impact bald eagles or their habitats. Encouraging public access could include construction of parks and pathways into new areas not previously accessible. Adverse impacts could also occur from changes in landownership that (1) increase the incidence of human-bald eagle interactions or (2) degrade or destroy habitat. Closing public land through a protective withdrawal, if this were to occur, could be beneficial to the protection of bald eagles and their habitats. Conservation easements, if made a part of transfer agreements, could prevent development-related levels of habitat disturbance. Recreation easements could be acquired by an acquiring agency and potential disturbance to species could increase as a result. Posting of informational and directional signs could increase the level of human-bald eagle interactions. Informational signs could increase public awareness of the adverse effects of human-bald eagle interactions, and directional signs could identify seasonally restricted areas to bald eagles from inadvertent human contact. The placement of these signs may encourage inappropriate human behavior that could have significant adverse impacts to the bald eagle, including nest or brood abandonment. Any right-of-way that increases the potential for human-bald eagle interaction or causes adverse habitat alterations could be detrimental to individual bald eagles. Any public or private entity that acquires BLM land could potentially modify bald eagle habitat causing nest abandonment or reducing the suitability of a nesting territory further leading to adverse effects to bald eagles in the action area.

Livestock Grazing Management - Livestock grazing is expected to continue. Vegetation removed by livestock would be unavailable to ungulates and other wildlife species as forage, and some vegetation losses could reduce nesting cover. The reduction of forage could cause elk to migrate more rapidly across Parcels 21 and 23 which are associated most closely with the South Park elk feedground. No improvements to grazing allotments are planned. Livestock grazing in riparian areas may lead to adverse environmental effects, including soil erosion, degradation of stream bank conditions, introduction of noxious/invasive weeds and the reduction of viable cottonwood tree sapling recruitment. However, these adverse impacts have not been observed on any allotment in the planning area to date. The greatest effect attributed to grazing (by livestock and/or ungulate wildlife) has been the reduction in understory shrubs such as dogwood and silver buffalo berry.

Activities associated with livestock grazing, i.e., herding, monitoring, could increase human presence in sensitive bald eagle habitats. If deterioration of riparian habitats due to overgrazing or trampling of stream banks leads to erosion, this could adversely impact prey species, reduce prey availability, or affect soil stability and ultimately the ability of cottonwood trees to grow or regenerate. Actions under the livestock grazing program have the potential for grazing to (1) degrade bald eagle habitat and for a (2) human presence to occur in bald eagle habitats causing potential disturbance to bald eagles and their habitat.

Minerals and Geology Management - Gravel mining activities may alter bald eagle behavior. Mining operations are most likely to influence foraging eagles and may deter them from otherwise suitable foraging habitats. Loss of potential habitat on private lands due to mining activities is possible but any future operations are unknown at this time. Mining operations within unoccupied suitable habitats may deter eagles from establishing new nest and winter roost sites. Mining activities (sand, gravel and recreational gold panning) have the potential to disturb or alter bald eagle foraging, nesting or winter roosting behaviors or alter the habitat. If oil and gas

development did occur within the planning area then roads, powerlines may pose impacts associated with collision or electrocution of bald eagles.

Off-Highway Vehicle Management - The areas which currently have bald eagle nesting do not have public access via OHV as the parcels are surrounded by other government or private lands, and the levees are gated. However, under the RMP, the focus is to improve public access. As more areas are opened, the potential exists for human use of OHVs into areas of bald eagle nesting or winter roosting. While new access may not permit human entry into existing bald eagle nesting or roosting habitats, the potential nevertheless exists for human incursion into areas of bald eagle nesting or winter roosting habitats. Also the potential exists that human presence would occur in habitats that could provide for future bald eagle use and thus would be made unsuitable by the increase in human OHV use. The potential exists for bald eagle habitats now free of OHV activity to be opened, or accessed in the future under a change in land managers.

Recreation Management - Noise, airborne dust and vehicle emissions could result from the use of motorized vehicles along the levees, at the Wilson Bridge boat and river access, and if additional river access or recreation sites are developed. Smoke from campfires at primitive campgrounds could affect air quality on a local basis. These actions associated with recreation management and use may disturb bald eagles which could result in nest abandonment. The RMP retains a focus on public access to the river which likely will result in a human presence increase on and along the river corridor. Bald eagle reproduction has been stable but an increase in human intrusion into bald eagle habitats could result in adverse impacts to nesting, foraging, or roosting. The amount of undisturbed territory within the RMP is limited and human intrusion into new areas could reduce successful reproduction.

Vegetation Management - Improvements to the “proper” vegetative component of the riparian habitat would have a beneficial effect on bald eagles as this would include ensuring the health of cottonwood trees and species intended to provide a stable stream bank and reduced erosion. Weed control would occur during the nesting and brood-rearing period. The proper use of control measures would ensure a chemical application but human presence in habitats being used by bald eagles could alter eagle behavior, including a prolonged absence from an incubating nest or even nest abandonment. Control of invasive weeds may benefit the eagle by reducing the potential for wildfires that may cause mortality to prey species and loss of habitat. Mushroom hunting would occur during the nesting and early-brood rearing season and the potential for human intrusion within sensitive territories is likely. No BLM timber harvest activities are planned within the action area. Based on the potential for necessary human activities associated with vegetation management activities to occur during the nesting or brood-rearing period, the bald eagle could be disturbed during critical nesting periods.

Watershed Management/Soils Management - Except as required to maintain existing levees, to construct new levees, including extensions, or to remove river flow impediments, there will generally be few actions being taken relative to the watershed. The majority of levee construction occurs during periods of low water flow. Emergency levee maintenance is possible during the high flows of mid to late spring. As is the situation with “emergency” actions, consultation will occur after the condition has been corrected and the effects of the action on any species can be analyzed. Direct losses can occur where levees are constructed through habitats. Water diversion has occurred on private lands to alleviate the threat of flooding. The potential for future diversions is unknown. Indirect impacts can result from an increase in human presence along new levees and the flooding of wetland habitats.

Bald eagles may be affected by activities associated with watershed and soils management. Adverse impacts could occur where new levees are constructed that cause a direct loss of habitats where the long-term effects of river diversion causes a reduction in cottonwood regeneration.

Roosting bald eagles may temporarily leave the area and foraging bald eagle may be unable to use an area while construction and associated activities take place. Nesting bald eagles may abandon their nests during levee or soil erosion work activities. Activities on private lands, where most bald eagle nesting occurs, could disturb or modify their behavior and alter the habitat over time. Restoration of wetland or riparian areas may benefit the bald eagle and its prey species by creating habitat. Habitat alteration on private land could come in the form of land clearing or wetland draining for residential development. Habitat alteration could also come in the form of stream channel alteration which would decrease the suitability of the stream channel for bald eagle foraging. Impacts associated with grazing could also reduce cottonwood stand regeneration which would decrease habitat suitability to bald eagles over the long term.

Wildlife and Fisheries Management -Human presence in bald eagle nesting territories associated with wildlife management activities may affect bald eagles and their habitats. Annual surveys and inventories will be conducted for active bald eagle nesting, roosting, and foraging areas; these surveys may be conducted by entities other than the BLM. These data will enhance the protection of known bald eagle use areas. Surveys and monitoring would be conducted in a manner to minimize, and avoid if possible, disturbance to bald eagle activities. However, it is possible that adverse impacts could occur from human intrusion into sensitive zones or from aerial surveys. Wildlife improvement projects would be conducted during periods when such activities would be the least intrusive to the bald eagles. Because much of the Snake River area is utilized by bald eagles on a year-long basis it may be impossible to completely avoid a temporary disturbance. Activities, i.e., habitat improvements, which increase available prey species, could benefit the bald eagle population. Human-related activities associated with wildlife surveys could disturb bald eagles.

Summary - It is anticipated that many actions potentially authorized under the Snake River RMP if they were undertaken would be likely to adversely affect the bald eagle due to human disturbance of nesting, roosting, or foraging eagles either to bald eagles on the BLM parcels themselves or to bald eagles on private parcels which have bald eagle territories overlapping the BLM parcels. These potentially authorized actions of the BLM could lead to nest abandonment.

In particular, the transfer of the parcels out of BLM ownership under the Realty Program could lead to adverse effects to bald eagles as the BLM would no longer have control of the activities and/or development which could occur there.

Cumulative Effects - Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal Actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The BLM is a minority landowner in Jackson Hole. Private land parcels cover more than 90 percent of the length of the Snake River between the Grand Teton National Park and the South Park Bridge (about 20 miles). For this reason, the effects of BLM actions that would be taken under these alternatives are minor in proportion to potential impacts from actions on private lands. However, the BLM does control the majority of public access to the river corridor. Public land parcels are located at both highway bridges over the Snake River, and at other points that allow a substantial amount of public access and recreation use.

The exact cumulative effects on bald eagles is not known at this time due to the lack of specific information on future state, local, or private actions in the planning area. Since most impacts to special status species are human-related (e.g., recreational use), or the result of human activities (e.g., livestock grazing, mineral development, housing development), and the human pressures in the planning area may be expected to change over the foreseeable future, the scope and scale of the impacts are not known. Increases in the human population in the planning area are reasonably expected to continue with the associated impacts of commercial and residential development. Recreational use in the planning area is growing and is reasonably expected to continue this trend as well with some public lands currently experiencing crowding and associated resource problems, increases in noxious weeds and other invasive species, and declines in the quality of the recreational experience. In addition, unregulated commercial float outfitting is occurring leading to concerns about overcrowding, health, and safety of river users. In addition, the demand for gravel is expected to continue growing in the planning area. Gravel materials are primarily needed to maintain levees along the Snake River for flood control, and for road construction around Jackson Hole (BLM 2003b). In any case, any future federal actions that occur within the Snake River RMP will be evaluated at a site specific level.

CONCLUSION

After reviewing the current status of the bald eagle; the environmental baseline for the action area; the effects of the Snake River Resource Management Plan; and the cumulative effects, it is the Service biological opinion that the direct and indirect effects of the implementation of the Snake River Resource Management Plan, as proposed, is not likely to jeopardize the continued existence of the bald eagle. No critical habitat has been designated for this species, therefore, none will be affected.

The Service has reached this conclusion by considering the following.

1. Bald eagles are widely distributed throughout their breeding range, with the population estimated at 5,748 breeding pairs in 1999 (USFWS 1999). Estimates in 2003 indicate that 13 breeding pairs were active within the planning area (Susan Patla, WGFD biologist personal communication) or 0.0023 percent of the population. The loss of relatively few individuals or nests would be a relatively minor impact on the population in the contiguous United States as a whole.

2. The Service believes that the take, resulting from this plan, is tied to habitat modification or disturbance of individual eagles that will result in harm or harassment of bald eagles. Any actions implemented under the RMP that may adversely affect the bald eagle would require separate formal Section 7consultation at the project level.

INCIDENTAL TAKE STATEMENT

Section 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of the incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement. [50 CFR 402.14(i)(3)]

AMOUNT OR EXTENT OF TAKE

The Service anticipates that bald eagles could be taken as a result of this proposed action. The incidental take is expected to be in the form of harm or harassment. Incidental take has been determined based on the BA and an analysis of the environmental baseline, effects of the action, and the cumulative effects. At the broad scale of this consultation, the Service is unable to anticipate all possible circumstances that may involve the take of bald eagles due to the actions implemented under the proposed plan. Therefore, the Service conservatively anticipates that some level of incidental take may occur due to specific actions implemented under the RMP. However, the amount or extent of take is unquantifiable at this time. The Service believes that the take, resulting from this plan, is tied to habitat modification or disturbance of individual eagles that will result in harm or harassment of bald eagles. Any actions implemented under the RMP that may adversely affect the bald eagle would require separate formal Section 7 consultation at the project level. Therefore, incidental take will appropriately be assessed, and coverage under the terms of Section 7(b)(4) and Section 7(o)(2) of the Act will be granted as appropriate, at the project level during formal consultation.

EFFECT OF THE TAKE

In this Biological Opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the bald eagle. No critical habitat for the bald eagle has been designated; therefore none will be destroyed or adversely modified.

REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take:

RPM1. The BLM shall implement measures at the individual project level to eliminate or minimize adverse effects to bald eagles and their habitat.

RPM2. The BLM shall implement measures across the Snake River BLM managed lands to improve habitat conditions for bald eagles.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of Section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary. Many of these terms and conditions are reiterated here or modified from the BLM Statewide Programmatic Bald Eagle Biological Assessment (BLM 2003c).

T&C1. As per Section 7 of the Act, the BLM will conduct site specific consultation with the Service prior to authorization of any actions authorized under the Snake River RMP which "may affect" bald eagles. These future consultations will provide a means for site specific analysis and documentation of levels of "take" of bald eagles.

T&C2. Appropriately timed surveys in bald eagle habitats should be conducted prior to any activities and subsequent authorization of activities that may disturb bald eagles or their habitats. A qualified biologist (not limited by job title) would be approved by the BLM to conduct such bald eagle surveys. All nest surveys should be conducted using Service approved procedures that minimize the potential for adverse effects to nesting raptors.

In the event species occurrence is verified, the proponent may be required to modify operational plans, at the discretion of the authorized officer, to include the appropriate measures for minimization of effects to the bald eagle and its habitats.

T&C3. Each year the BLM shall verify the status of known bald eagle nests, communal winter roosts, and concentration areas on lands administered by the BLM within the RMP. As a matter of maintaining inventory information, the BLM shall coordinate annually with the Service, WGFD, and other appropriate entities to determine the status of known and new bald eagle nests, communal winter roosts, and other concentration areas. Known bald eagle nests, communal winter roosts, and concentration areas will be assumed active if status has not been verified.

T&C4. Activities and habitat alterations that may disturb bald eagles will be restricted within suitable habitats that occur within bald eagle buffer zones (see GYBEWG 1996). Deviations may be made after consultation with the Service.

Zone 1 (within 0.25 mile, year round) is intended to protect active and alternative nests. For active nests, minimal human activity levels are allowed during the period of first occupancy to two weeks after fledging.

Zone 2 (from 0.25 to 0.5 mile from the nest, Feb 1 – Aug 15) is intended to protect bald eagle primary use areas and permits light human activity levels.

Zone 3 is designated to protect foraging/concentration areas year-round 2.5 miles from the nest.

T&C5. Activities that may disturb bald eagles will be restricted within 1 mile of known communal winter roosts during the period of November 1 – April 1, annually. No ground disturbing activities will be permitted within 0.5 mile of active roost sites year round.

T&C6. Power lines must be built to standards identified by the Avian Power Line Interaction Committee (APLIC 1996).

T&C7. In the event a dead or injured bald eagle is observed, the Service Wyoming Field Office (307) 772-2374 and the Service Law Enforcement Office (307) 261-6365 will be notified within 24 hours of the discovery.

T&C8. BLM will monitor and restrict, when and where necessary, authorized or casual use activities that may impact bald eagles or their habitats, including, but not limited to, recreational mining and oil and gas activities. Monitoring results should be considered in the design and implementation of future projects. To monitor the impacts of site-specific projects authorized under the Snake River RMP, that are likely to adversely affect bald eagles, the BLM shall prepare a report describing the progress of each such site-specific project, including implementation of the associated reasonable and prudent measures, and impacts to the bald eagle (50 C.F.R. § 402.14[i][3]). The report, which shall be submitted annually to the Service's Wyoming Field Office by January 1 beginning after first full year of implementation of the Proposed Action, shall list and describe:

1. adverse effects resulting from activities of each site-specific project;

2. when and if any level of anticipated incidental take is approached (as allowed by separate Incidental Take Statements from site-specific formal consultations);

3. when and if the level of anticipated take (as allowed by separate Incidental Take Statements from site-specific formal consultations) is exceeded; and

4. results of annual, periodic monitoring which evaluates the effectiveness of the reasonable and prudent measures. Include items such as:

    a. assessment of whether implementation of each site-specific project is consistent with that described in the BA;

    b. compliance with terms and conditions; and

    c. documentation of sightings of listed species during activities of each site-specific project.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the authorized activities under the RMP. If, during the course of the authorized activities, any level of incidental take has exceeded that as permitted by site specific formal consultations for bald

eagles, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The BLM must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

COORDINATION OF INCIDENTAL TAKE STATEMENTS WITH OTHER LAWS, REGULATIONS, AND POLICIES

The Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions specified herein.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations (CR) are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species.

CR1. The Service recommends that when project proposals are received, BLM initiate coordination with the Service at the earliest possible date so that Service can provide information on natural resource issues. This should minimize the need to redesign projects at a later date to include conservation measures, that may be determined as appropriate by the Service.

CR2. The Service recommends that the BLM administered lands within 1 mile of an integral part of bald eagle habitats including nests, communal winter roosts, and foraging/concentration areas not be exchanged or sold. If it is imperative that these lands are transferred out of BLM ownership then every effort should be made to include conservation easements or voluntary conservation restrictions around the important bald eagle habitat to restrict activities of the property and protect the bald eagles from disturbance and their habitat from destruction.

CR3. The Service recommends that proponents of BLM authorized actions be advised that roadside carrion can attract foraging bald eagles and potentially increase the risk of vehicle collisions with bald eagles feeding on carrion. When large carrion occurs on the road, appropriate officials should be notified for necessary removal.

CR4. The Service recommends that BLM coordinate with APHIS - Wildlife Services Division to minimize potential impacts to the bald eagle and its habitats from pest/predator control programs that may be included in the local animal damage control plan. The Service should also be included in this coordination.

CR5. The Service recommends that proposed and future water projects not be designed to discharge into drainages or reservoirs occurring within 500 feet of county roads and highways. This measure is intended to (1) minimize vehicle collisions with wildlife using the water source, and (2) minimize the occurrence of eagle-vehicle collisions resulting from eagles feeding on road-killed wildlife.

CR6. The Service recommends that BLM provide educational information to project proponents and the general public pertaining to the following topics: appropriate vehicle speeds and the associated benefit of reduced vehicle collisions with wildlife; use of lead shot (particularly over water bodies); use of lead fishing weights; and general ecological awareness of habitat disturbance.

CR7. The Service recommends that BLM coordinate with other agencies and private landowners to identify voluntary opportunities to modify current land stewardship practices that may impact the bald eagle and its habitats.

CR8. Since bald eagles are often dependent on aquatic species as prey items, the Service recommends that BLM periodically review existing water quality records (e.g., Wyoming

Department of Environmental Quality (WDEQ), WGFD, U.S. Geological Survey (USGS), etc.) from monitoring stations on, or near, important bald eagle habitats (i.e., nests, roosts, concentration areas) on public land for any conditions that could adversely affect bald eagles or their prey. If water quality problems are identified, the BLM should contact the appropriate jurisdictional entity to cooperatively monitor the condition and/or take corrective action.

CR9. The Service recommends that BLM projects with the potential to disturb bald eagles should be implemented in the least amount of time and during periods least likely to affect the bald eagle.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

RE-INITIATION NOTICE

This concludes formal consultation of the actions outlined in the request. As provided in 50 Section 402.14, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing take must cease pending re-initiation.

Thank you for your assistance in the conservation of this endangered species. In future communications regarding this Biological Opinion please refer to consultation number ES-6-WY-03-F017. If you have any questions regarding this BO or your responsibilities under the Act, please contact Alex Schubert of my staff at (307) 777-7234 ext. 38.

cc: BLM, Endangered Species Coordinator, State Office, Cheyenne, WY (J. Carroll)
DOI Solicitor, Denver, CO (D. Jacobsen)
FWS, Endangered Species, Denver, CO (J. Parker)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (T. Collins)
WGFD, Non-Game Coordinator, Lander, WY (B. Oakleaf)

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APPENDIX A - CURRENT BLM CONSERVATION MEASURES

The current BLM conservation measures which may be used for the Snake River RMP (taken verbatim from the June 2003 Snake River BA) are as follows:

All Management Programs

CM1. All surface and other human presence disturbance activities will be evaluated and mitigated through the implementation of the "Wyoming BLM Mitigation Guidelines for Surface-Disturbing and Disruptive Activities";

CM2. BLM rangeland health will be evaluated and charged to meet the "Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming";

CM3. Coordination between BLM specialists and BLM biologists during the planning and implementation phases of all projects and actions to ensure adequate exchanges of knowledge relative to the bald eagle;

CM4. Develop and implement timing stipulations to avoid or minimize disturbance of species;

CM5. Surveys for endangered and threatened species will be conducted prior to project initiation.

CM6. Bald eagle specific conservation measures include the following:

1. Where possible, all surface-disturbing or authorized human activity on BLM parcels (except livestock grazing) will be seasonally restricted from February 15 through August 15 within 1.0 mile of all active eagle nests when it is determined that an adverse impact could occur. An active eagle nest is one that has been occupied once in the past 3 years;

2. No permanent (life of project), project related, high profile structures will be located within 2,600 feet of a bald eagle nest;

3. No surface disturbing or human activities will be authorized between November 15 and March 15 within 1.0 mile of known bald eagle winter use areas when it is determined that an adverse impact could occur;

4. A buffer zone will be maintained around *active* raptor nests to ensure that the future function of raptor nests and raptor recruitment of young are not adversely compromised. The buffer distance may vary depending upon prey availability, natural topographic barriers, and line-of-sight distances;

5. Prior to surface disturbing activities during the nesting season or in wintering areas, BLM will require completion of a field survey within 1.0 mile of the authorized action. Findings will be reviewed by the BLM prior to or as components of the authorized action. If bald eagle activities are identified within the survey area, the authorized action will be postponed and consultation with the Service will be initiated;

6. As deemed necessary, surveys to locate bald eagle roost trees, perch sites, and feeding areas will be conducted in cooperation with the Service, the WGFD and the landowners to ensure that appropriate mitigation measures are being implemented;

7. No documented nest trees or mature cottonwood trees suitable for bald eagle nesting will be removed during project construction of a BLM project on Federal lands or mineral estate without additional analysis to determine any impacts and an appropriate level of mitigation. Future consultation with the Service will be required in any instance where a "takings" may occur.

Climate and Air Quality

CM7. Mitigation or conditional requirements will be applied to authorized actions and activities on a case-by-case basis to avoid or minimize air quality and noise problems.

Fire Management

CM8. Using bulldozers in riparian areas will be minimized.

CM9. The use of fire retardants compatible in a riparian environment would be used.

CM10. Restoration within burned areas will be by natural succession unless special needs are identified to prevent further resource damage (e.g. weed introduction, erosion, etc.).

Hazardous Materials and Waste Management

CM11. When and where possible, non-emergency operations would be scheduled so as to prevent or minimize adverse impacts to wildlife.

Lands and Realty

CM12. Identify ROW corridors and constricting areas or ROW avoidance areas.

CM13. The retention of conservation easements would protect Status Species habitats from development.

Livestock Grazing

CM14. Enforce modifications to grazing management strategies.

CM15. Fence riparian areas where grazing is impacting the rejuvenation of cottonwoods.

CM16. Add stipulations to protect riparian areas when grazing leases come up for renewal.

CM17. Adjust grazing seasons to reduce browsing of understory shrubs during fall and winter.

Minerals and Geology

No specific conservation measures developed for Minerals and Geology activities.

Off-Highway Vehicles

CM18. Create site management plans for high intensity OHV use areas.

CM19. Prohibit OHV use in riparian vegetation communities.

Recreation

CM20. Monitor recreational use near bald eagle nest and roost sites.

CM21. Domestic dogs should be kept on leashes.

CM22. Update site management plans for recreational areas to include "no disturbance season" for bald eagle active nest and roost areas and cuckoo habitat.

CM23. Move trails away from known sensitive species habitats.

CM24. Boat and raft landings should be prohibited in riparian vegetation communities.

Vegetation Management

CM25. Application of chemicals shall be in accordance of EPA guidelines and following the Department of Interior's restricted chemical use list

CM26. Chemical applications will be timed to avoid nesting or roosting seasons when possible

CM27. Where possible, chemicals will be chosen that will have no effect to wildlife species

CM28. Buffer zones along water ways and riparian areas will be used unless chemical is safe for use in these areas.

CM29. Where noxious or invasive weed species are increasing in waterways or riparian areas, the use of chemicals safe for application in these areas should be prescribed

CM30. Keep a record of all weed control activities and submit a copy to the Service annually

Visual Resources

No specific conservation measures developed for Visual Resources activities.

Watershed Management

No specific conservation measures developed for Watershed Management activities.

Wildlife and Fisheries Management

No specific conservation measures developed for Wildlife and Fisheries Management activities.

All species

CM31. All BLM field offices are required to implement a special status species management program (including Threatened and Endangered species), and conduct and maintain current inventories of special status species on Public Lands (BLM Manual 6840 - Special Status Species Management). To the extent possible, this resource data should be accumulated and assimilated in a Geographic Information System (GIS) format for ease of future use.

CM32. In habitats with the potential to have a Status Species, the appropriate survey will be conducted prior to initiation of an authorized action; the results of Status Species surveys should be conducted prior to initiation of an authorized action; the results of Status Species surveys should be reported to the Service WY Field Office.

CM33. Activity planning and analysis of actions require analysis of effects to all resources, including special status species. Coordination between BLM planners, BLM resource specialists (including biologists), activity proponents during the activity planning and site specific implementation stages is necessary to exchange information on Threatened and Endangered species locations, any necessary activity constraints, and conservation measures.

CM34. Clearances are required for authorized BLM activities in areas of known or suspected to be essential habitat for animals and plants classified as Status Species, or other species of concern. These clearances will be done in accordance with BLM and Service guidelines, as appropriate, to verify the presence or absence of these species. All clearances shall be performed prior to activity implementation. In the event that a subject species is identified, the project or management action may be relocated or modified, as necessary, to include protection requirements for the species and its habitat

CM35. No surface disturbance will be allowed within 500 feet of riparian habitat, wetland and/or live water unless a high potential for successful rehabilitation exists and/or impacts will be temporary in nature.

CM36. Objectives of the livestock management program in riparian areas will include maintenance, restoration and improvement of riparian values where livestock grazing has contributed to riparian values where livestock grazing has contributed to riparian management problems.

CM37. Riparian habitats will be maintained, improved, or restored to provide wildlife habitat, improve water quality and enhance forage conditions.

CM38. When the BLM considers authorizing a project or program, the agency has a statutory responsibility under NEPA to assess potential environmental impacts to species protected under ESA.

CM39. The BLM has the statutory authority under the Mineral Leasing Act of 1920, the Mineral Leasing Act for Acquired Lands, and the Federal Land Policy and Management Act of 1976 to take reasonable measures to avoid or minimize adverse environmental impacts that may result from federally authorized mineral lease activities. This authority exists regardless of whether or not the surface is federally owned.

<u>Bald Eagle</u>

CM40. Where possible, all surface-disturbing or human activities will be seasonally restricted from February 15 through August 15 within 1.0 mile of all active eagle nests. An active eagle nest is one that has been occupied once in the past 3 years.

CM41. No permanent (life of project), project related, high profile structures will be located within 2,600 feet of a bald eagle.

CM42. No surface disturbing or human activities will be authorized between November 15 and March 15 within 1.0 mile of known bald eagle winter use areas.

CM43. A buffer zone will be maintained around active raptor nests to ensure that the future of raptor nests and raptor recruitment of young are not adversely compromised. The buffer distance may vary depending upon prey availability, natural topographic barriers, and line-of-sight distances.

CM44. Prior to surface disturbing activities during the nesting season or in wintering areas, BLM will require completion of a field survey within 1.0 mile of the authorized action. Findings will be reviewed by the BLM prior to or as components of the authorized action. If bald eagle activities are identified within the survey area, the authorized action will be postponed and consultation with the Service will be initiated.

CM45. As deemed necessary, surveys to locate bald eagle roost trees, perch sites, and feeding areas will be conducted in cooperation with the Service, the WGFD and the landowners to ensure that appropriate mitigation measures are being implemented.

CM46. No documented nest trees or mature cottonwood trees suitable for bald eagle nesting will be removed during construction of a BLM project on Federal lands or mineral estate without additional analysis to determine any impacts and an appropriate level of mitigation. Further consultation with the Service will be required in any instance where a “takings” may occur.